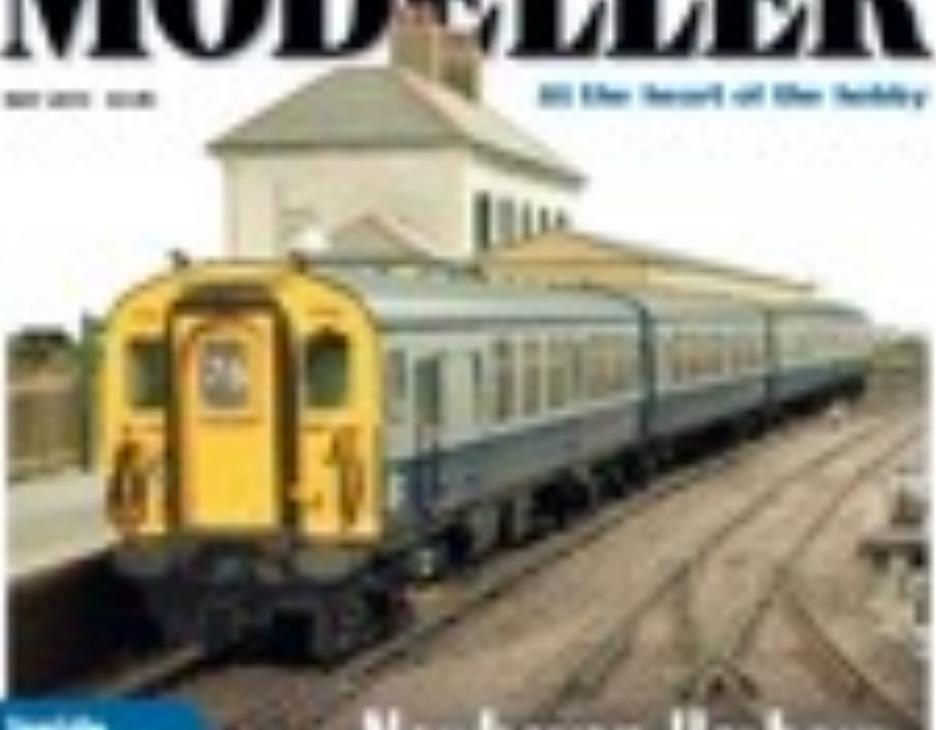
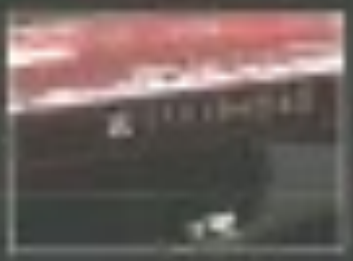
RAILWAY MODELLER



Newhaven Harbour

Colin Marks' rendition of the Southern Electric scene of the 1970s in 00

- Bridgeline
- Holly Moor
- Rural Town
- Hidden Vale Buildings
- News & Reviews



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HORIZON

KATO

The 1950s were a Renaissance in United States Railroad History. With such premium passenger trains as the Santa Fe's **Super Chief**, the point effort that was the **California Zephyr**, and the Southern Pacific's glamorous **Morning Daylight** all providing rail patrons with their pick of luxurious travel options.

Into this prosperous time rode the Union Pacific's own entries into the competitive realm of premier travel. The "City of" trains. One of the most distinctive and iconic of these was the **City of Los Angeles**, with three more domes (named "Domeliners"), including the first dedicated dome dining car which offered dinner with and under the stars.

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106-[illegible]	[illegible]	**N Union Pacific "City of Los Angeles" 11-Car Set**	[illegible]
106-[illegible]	[illegible]	N [illegible] Union Pacific [illegible]	[illegible]
106-[illegible]	[illegible]	N [illegible] Union Pacific [illegible]	[illegible]
106-[illegible]	[illegible]	N [illegible] Union Pacific [illegible]	[illegible]
106-[illegible]	[illegible]	N [illegible] Union Pacific [illegible]	[illegible]

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page 44

CLASSIC TOY TRAINS

page 30

page 30

IN THIS ISSUE

ON THE COVER
The Bachmann Frisco 4-8-4 gets two locomotive engine cars to pull it in our O-gauge series on the construction of Rick's layout. See Frank's article

RAILWAY MODELLER

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Trains

MAY 2011

VOL. 71, NO. 5 NEWS AND FEATURES

FEATURES

ON THE WEB

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Pacific Express PDF

Whose trail was that?

Tweet Trains updates

Trains Daily Wire

Eerie inspirations

A **funny thing** happened on the way to completing our draft book that [illegible] project layout.

When we started we made our first [illegible], I was assigned to build the town's station. (I'm looking to in the plan to show).

Since the station is prominently sited and between dominating tracks of two railroads, I thought it should be something special, so I graded a space on one end of the depot. The article about its construction starts on page 18. "What next" on page 18 is the "Space thing happened" part of this story.

Before I built the station, I researched various style known looking for a photo of a prototype for inspiration. What I found (many examples, some quite fit, are nearly so as Williams Bay station is 100 percent fictional. I'm so I thought).

A few months later, while looking through the November 1974 issue that made the so wonderful issues I found drawings of the Lakeside Pennsylvania depot, N.Y., depot. It's the red station in the photo in the upper right. Except for the station's two story height, it has no resemblance to our Bay Horizons station.

In 1974 I was a teenage model rail reader in the cusp of high school graduation. I could tap 1974 article from time to my reference every 5-10 years!

That wasn't the only with consideration about our 1957 version of the town of Williams Bay. Associate Editor Terry Chin built the town's commercial district. This building was actually created by the manner, shaping concrete-shaped pieces of wood blocks available on our hot one for a price room. To fit the space Terry's structures are flattened, or so he thought.

We had Williams Bay is a small town along Lake Geneva in southeastern Wisconsin, along the same route Milwaukee Railroad's Hiawatha trains ran.

A few months after Terry finished the HO scale town, a friend of Bay Horizons was and I had a chance to drive through the real Williams Bay. Here's more than a photo of the camera where in which the railroad remains and on the pavement discovered something a museum remaining road. There's a photo of it on page 40.

I'm a permanent school in the real town of Williams Bay and we spend a lot of time at a house on the Lake building. The railroad was first in the permanent [illegible] lot.

Perhaps it's time to run the Hiawatha Twin Flyer.

Contributing to Model Railroader

We welcome contributions from our readers, including articles, photographs, and prototype drawings. For detailed information on submitting material to MR, contact our editorial assistant Eric Stellhorn at 262-796-8776, ext. 565, or ericstellhorn@kalmbach.com. Model Railroader assumes no responsibility for the safe return of unsolicited material. All accepted unsolicited material is intended for publication by Kalmbach Publishing Co. unless otherwise noted. We receive letters, questions, news releases, and club news items and contributed photos.

Model railroading is fun!

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ARTI1009 - BALTIMORE

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The PCC Trolley Car was used in more than 50 major metropolitan cities across North America dating back in the 1930s. Aristo-Craft plans to bring you many of these streetcars in future years. Collectors will surely love this unique and exciting addition to the Aristo-Craft line.

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Dave Campbell's 2-gauge layout

[illegible]

[illegible] [illegible] Photo Album [illegible] Wednesday [illegible] Be sure to include your name, address, and daytime telephone number. A description of each image, including the gauge and scale of the train, and the name of the photographer or artist, [illegible] photograph – and it's published – we'll pay you [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

▲ Frank Ramsey's Standard gauge layout

▲ Bernd Wolf's G gauge layout

COLORFUL LOCOMOTIVE ANNIVERSARY. General Electric's first breakthrough locomotive model was this U25B Horizontal U25B, and MTH celebrates this notable diesel with an O gauge Premier line version. The model features two full-style motors, Powered 1-6 and with couplers. The locomotive costs $429.95. Take your holiday retailer or visit the product locator at mthtrains.com.

TRAIN A SPECIAL. Animated mechanisms offered are 3-scale operator figures taking a break. The figures are the two 1240 workers drinking, 1242 worker with cup, 1243 worker with sandwich, 1245 worker with hard hat on leg, 1246 worker looking left, and 1240 worker shouting. Figure 1246 is $6.95 and the rest are $6.75 each. Go to artitoys.com or to order call 888-274-2482.

A BRAND IT YOURSELF The GP7 Lionel Corporation Models catalog provides a flavor back to the fortunate days of model railroading with this classic sky blue. The no. 7-4000-2 was 40 bit. Remove all the parts and need to make an orange no. 2 BNA 4 cars. The O gauge kit is also available in gray and sports sprue for $499.95 per kit. See your retailer go to lionelcorp.com.

Märklin exits insolvency

FIRM LOOKS TOWARD THE FUTURE

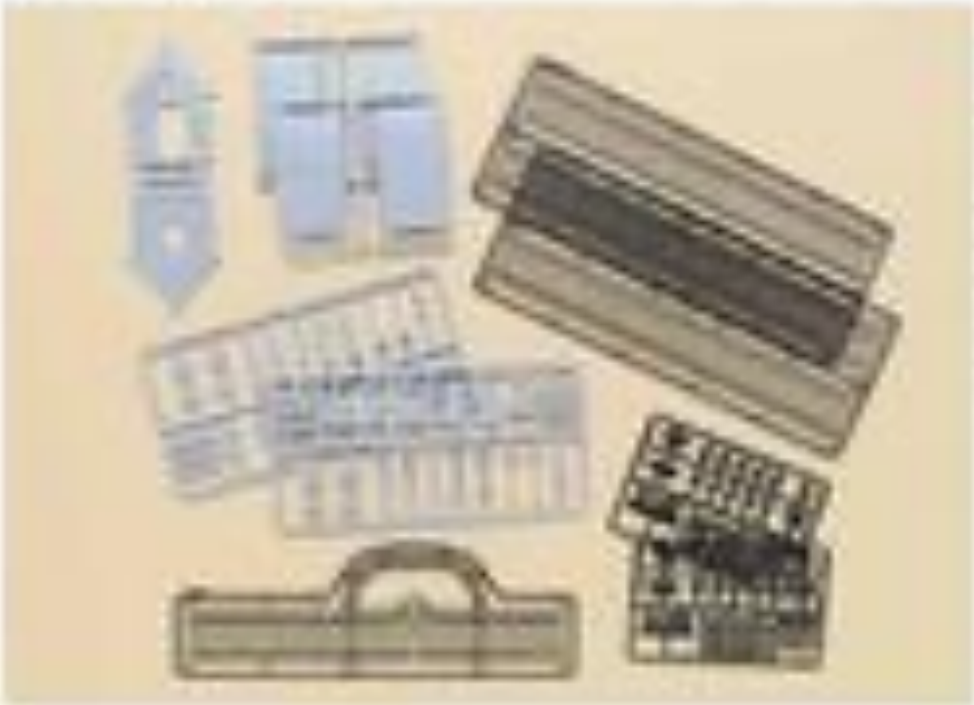
The trade magazine World Rails reports that Kornelius Gandel, cofounder and managing director of printing machinery manufacturer Heidelberg, is planning a takeover bid and having formed with a consortium plan approximately 1 million to Märklin's debt.

A video the plan. Märklin will pay $0.4 and face no creditors immediately. Secured creditors will get the face value of the percent, $0.7 and less. The company has an cash $0.7 million for its advisors and creditors.

A Märklin creditor vote a plan is in place to assure 100 percent of claims of the company in total. The creditors values half assessment to about $1.1 million in total, of which approximately $60 million was owed to the banks.

The company has a pre-IPO Series A shares and will be overseen by Heidelberg Druckmaschinen, with a strong German investment to assure the management. Märklin's Michael Pfeiffer, managing director for the Asia Technologies, and a representative of the creditors.

The company hopes to be ready for a listing in 2009 and to begin 2010 earlier for pre-tax. Pfeiffer estimates the company's 2009 sales may be two years and revenue at $22 million on sales of $100 million. Check Chuck Dryden and his further updates on the news.




branch line
Track Plans
40

ALL TIME EMPIRE COMPANY ships is continuing to document the history of the EMD F3 diesel and version of a Alco. The latest release is the EMD F3 Phase 2 (underscribed as in Baltimore & Ohio, Central of Georgia (via Wabash Pacific shown), Southern Pacific or Western Pacific. The O gauge model features non-operating motors, Lionel's TrainMaster and Railsounds systems, coil couplers and speed control. Check out this locomotive series at your local retailer, or see the entire Alco O product line at alcoscale.com.

COUNTY BEERS Williams by Rapidmount is marketing a Strickland Brewery refrigerator car. Featuring the Strickland Brewery of Indianapolis, IN, this car features striking graphics and die cast metal trucks and coupler and sells CAD $[illegible]. Text your Williams retailer or go to [illegible].com.

UPDATE Canadian cargo will run on time, thanks to Canadian Car, which offers a current run Alco F-23-like B style accessorie express refrigerator car in Canadian Pacific livery. Due out this spring, the limited edition O gauge car is available in two road numbers, and costs $79 plus $10 shipping. For more information email info@canadiancargo.ca, or call 604-882-0817. To order, send your payment to Mark Nimis, 2274 Woodsdale Place, North Vancouver, BC V [illegible] (CN).

TERRITORIAL LAYOUT FEATURES Brightscenes.com offers two facades and a school hall to populate your urban scene. The Tower Facade is in the Beaux Arts style (top left) and the Loop Facade is in the Neo Gothic style (see right). Both are facades with no back or back and the sides are not detailed. Facades cost $[illegible] each. The School Building is the foreground is in the modern style and costs $[illegible]. For more information email [illegible] or go to brightscenes.com.

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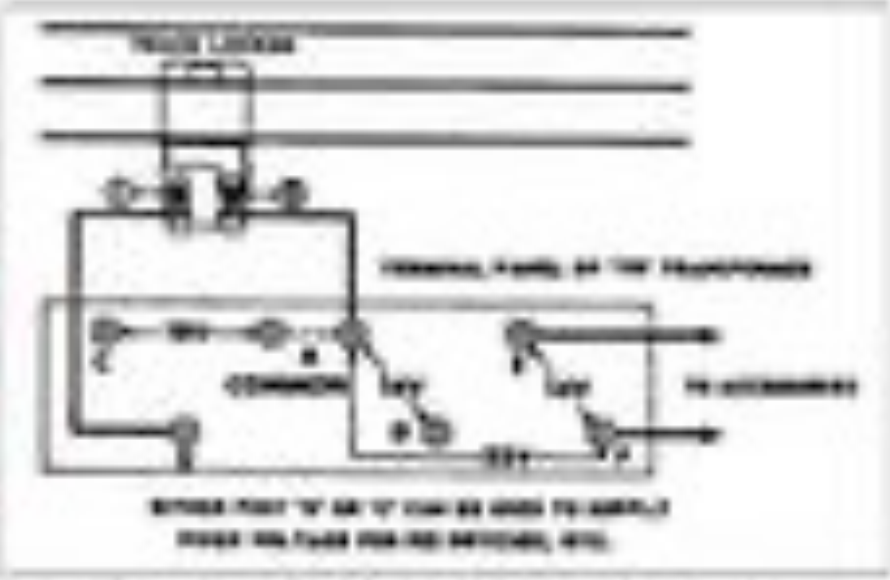
These three article collections cover a variety of projects that will enhance the theme of your personal layout. Toy train scenery, bridges to tracks, and build header structures and. I are each devoted to one specific aspect of modeling. Whatever you are currently focusing on in modeling your model, we can help.



The Lionel TW transformer offered a variety of ways to connect power to track and accessories. Not these choices could be bewildering if you didn't have a diagram.

Hook up a postwar Lionel TW transformer

CONFUSING WITHOUT AN INSTRUCTION SHEET

Does anyone have a diagram for the wiring up to wire track and accessories to a Lionel TW transformer? I got the track wired up and have a set and always struggle hooking it up. – Kenneth Fox, Kalamazoo, MI

A lot of effort happens with a Lionel Prewar, Lionel's standard way to make the TW versatile by giving the operator several choices of voltage where hard voltage controls, although it was confusing to anyone who couldn't find the instruction sheet. You are not alone.

Here is how the price of a standard Lionel choice:

Posts 1 and 5 provide variable voltage 18-24 volts for the track circuit.

Posts 2 and 6 provide 18 fixed volts for accessories.

Posts 3 and 7 provide 14 fixed volts for accessories.

And, the newer addition, posts 4 and 8 also provide 14 fixed volts. It will come in handy if Lionel has the temperature.

The Lionel TW transformer offered a variety of ways to connect power to track and accessories.

Clicking above zero

On my prewar O-gauge layout I use trains and switches made by Marx (Lionel Switches). Most of my trains run fine, but models with clicking above zero predominate. I have not been able to run my Lionel Ex-2000 series heavyweight passenger set or any locomotives with above zero engine noise. – Ken Ann Ken Ann

GET READY FOR AN INTRICATELY DETAILED MASTERPIECE.

Introduced in October 1999 by the Electro-Motive Division of General Motors (EMD), the GP7 was powered by a 16-cylinder, 1,500 horsepower 567B diesel engine. In basic form, this always all-steel switcher, followed the design of diesel switchers with the addition of a short hood instead of an open cab. In January 1950, the GP7 became the 1,750 horsepower GP9.

We are hard at work on the upcoming GP7 and GP9, including the GP9 Southern Pacific "Black Widow" pictured here.

Progress is in the blown away — this is Genesis' prototypical accuracy at its finest. These models have tons of prototype-specific details, including grilles, dynamic brakes, ventilators on filter box, full fuel tanks, battery access doors and much more. The units are DCC ready using Quick Plug™ technology and are available with SoundTraxx "Tsunami" sound.

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GP7 Phase 1 Sound (CT) N-DCC	GP9 Sound (CT) N-DCC	Southern Pacific Black Widow #7007
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GP7 Phase 3 Sound (CT) N-DCC	GP9 Sound (CT) N-DCC	Southern Pacific Black Widow #7003
GP7 Phase 4 Sound (CT) N-DCC	GP9 Sound (CT) N-DCC	Southern Pacific Black Widow #7017

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QUESTIONS-ANSWERS

A [illegible]

Wear on rail joints

Q [illegible]

A [illegible]

Insulated pins

Q [illegible]

A [illegible]

Postwar culvert loader

Q [illegible]

A [illegible]

[illegible]

Transformer plug

Q [illegible]

A [illegible]

[illegible]

Heavy electrics eliminate steam locomotive smoke

I know the New York Central used electric locomotives to haul its passenger trains into New York City and through Cleveland. I'm wondering if NYC used this practice anywhere else on its system?
George Hofmann, New York, N.Y.

The New York Central operated three electrified districts, and all three were built to enable problems with the smoke from steam locomotives. The best known is the NYC's passenger route into Manhattan (Grand Central Terminal). In 1908 more than 300 daily steam trains created an intolerable nuisance for the neighbors. The heavy smoke in the Park Avenue Tunnel was also a safety hazard, as it obscured the signals and caused a low-little collision with numerous casualties.

Governmental regulations forced the electrification of the route, as NYC built a 600-volt direct-current system that eventually grew to nearly 70 route miles, including 96 track miles. Most rails on under running third rail. The rails of third rail is hung from brackets mounted on long wood ties. Wood insulators covers the top and both sides of the third rail so only the bottom surface is exposed. The pickup shoes are mounted on the locomotive trucks so they collect current from the exposed underside of the third rail. Parts of this system continue to operate today.

To avoid a similar smoke situation elsewhere, the NYC electrified its 17-mile passenger route from suburban Cos Cob, through the new Grand Central Terminal, to Lexington in 1906. It operated off a 1,500-volt DC overhead catenary and handled passenger trains exclusively and is now abandoned in 1913.

The NYC also operated a third electrified route to move passenger and freight trains between Detroit, Mich., and Windsor, Ont., through the Detroit River Tunnel. Built by the Detroit River Tunnel Co., a subsidiary of the Michigan Central RR, this 6.1-mile route included nearly 19 miles of track centered by a 1,900-foot 19-station-crossing third rail.

From the inception, the Detroit River Tunnel was designed to be electrified. The 1.4-mile-long tunnel ran beneath the international border and opened for service in late 1910. It operated until the electrification was abandoned in 1973.

In September 1913, just a New York Central 4-4-4 Hudson has just arrived in Detroit with southbound train no. 46, the Michigan Express from Chicago. The Hudson is crossing in front of the 1913 Detroit Tower and will shortly haul soot to the original terminal. Meanwhile, a pair of "Tunnel locomotives" have coupled onto another through train (left) while caution employees are being unloaded. In a few minutes, the electrics will haul the express train through the tunnel to Windsor, where another Hudson is waiting to take over for the train's southbound leg across southern Ontario.

Arriving southbound passenger trains stopped at the Michigan Central Station in Detroit, where the steam locomotive was exchanged for a pair of simple-cab electric locomotives. A similar procedure was followed for southbound trains arriving at the Windsor depot.

After the appropriate customs and immigration inspections were completed, the trains proceeded through the tunnel (called tunnel). Climbing the 1 percent southbound grade at 1.1 percent (eastbound tunnel), separate steel tracks were provided for through freight trains along side the mainline in Detroit and in the Windsor Yard.

Under normal conditions, the electric locomotives hauled 1,000 to 1,100 tons

A pair of NYC "Tunnel motors" await exclusive clearance before they leave Windsor Yard for their short trip through the Detroit River Tunnel on May 24, 1990. The white warning stripe cut has wood insulation on the nose and both sides on the pilot; shoe-rider sections on the underside. [illegible]

[illegible] mechanical or [illegible] have continued with a pair of transit motors trading for more and a third pulling on the rear. Even Knights had to be just even more so. Now, workers for the trip through the tunnel. As the electrics turned on the opposite ends, they necessitated the Knights be the more locomotive that would also work to complete the train.

The photo taken with Marion, N.Y., is a milestone as, [illegible] days after its arrival at 13th Street Depot, while a pair of electrics sold for the customs and immigration inspectors to release the northbound train. The rail building is the Michigan Central Station. That station, big enough on the right supports even hold workers with hand passengers on the returns; note door porter hole, also overhead on their ground and gear in the third rail unused double slip switches.

Opportunities discussed the work for the electrics as a pair of NYC passenger cars could pass just from several trains through the tunnel.

The NYC's then-having revolted bought Lionel from [illegible] workers [illegible] and to check the short tunnel grades [illegible]. But as [illegible] Knights [illegible] and transfer jobs incurred a pair of Lionel helpers on the head end. Interestingly these (and helper jobs) [illegible] their original "Tunnel motor" designations for [illegible] years. Wild Green Pea Soupe [illegible] the [illegible] [illegible] the Detroit River the tunnel between [illegible] — Jim Quiggin [illegible]

Send and questions photo [illegible] with [illegible] to Information Desk, Model Railroader magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail [illegible]. We regret we can't [illegible] of the [illegible] to [illegible]

John Kelly

Adventures in code 55 track

Code 55 track, seen here on Ann Kelly's Tehachapi Loop layout, has caused the two Nor N-scale realtors – but it's non-issue without challenges. JOHN KELLY

[illegible] Tehachapi Loop on I call it Tehachapi N. I'd used Peco code 55 track on Tehachapi XL, and that's very much on I was planning to use it again. Then I saw Atlas's new code 55 flextrack and was hooked.

The Atlas flex was considerably smaller than Peco's and spared down together, making the Atlas track more realistic. It's a track was well made, sturdy and reliable, but since I was mentally moving now, I decided to continue. I'm happy I did, but I can name a couple of challenges you should know about. It's not, don't actually.

Bumps in the road. Peco, after Atlas code 55 was introduced, wouldn't be concerned that Micro Trains cars made a fairly robust rub sound as they rolled along because the flanges were bumping on the molded rail/ties/ties. This wouldn't have been such a big deal with other brands, but there were Micro Trains cars around among most N cars so broken to mellow.

This compatibility problem was compounded by the fact that Micro Trains wheels were also well-rounded, and many N scales used them to replace the thinner that came with some other brands of rolling stock. Micro Trains tracks were noticeably free rolling, and if you bought the trains that came with one, you unwitting bumping not tracks was a way to convert equipment to the premium Micro Trains couplers.

The trigger wrong to call Micro Trains wheels "pizza cutters" because of their large flanges. Mentioning this revision a more realistic, wheel profile could replace them with smaller flanged wheels. Replacement candidates included Micro Trains' new less profile wheels.

My favorite combination has become Atlas metal wheelsets in Micro Trains trucks. I prefer these to plastic wheels because of their deep shade. Also this combination rolls even more than these a stock Micro Trains truck.

In the meantime, Micro Trains continued releasing cars with the large flanges, but also began including a set of its less profile wheels for those who wanted to switch. The company is no longer doing that, and instead has introduced a new wheel truck that used flanges. The last two Micro Trains cars I bought have these, and they rock and roll good to Atlas code 55 track. But enough about wheels for now.

The bigger problem. I was discovered that my accessories were shorting on the Atlas code 55 turnouts, and after fiddling and trembling I did my the points, frogs, and rail joints didn't help. I mostly did not turnout to stock trying to solve the derailment problem. It was heartbreaking to watch a beautiful new Kato SD40 I still recently run a turnout and little flag over on its side.

Finally, the lightbulb went on: I had switched on. If the turnouts check not with the Walthers Model Railroad Electronics monitoring gauge and all my cars go through them are fine, then the problem has to with the locomotive.

And that's exactly what it turned out to be. The front-to-back wheel spacing on every locomotive was too tight – not by much, only about the thickness of a business card – but that was enough to cause all a lot of concern.

I'm here correcting this by shaving the tracks and setting the back-to-back wheel spacing to .[illegible] (the NMRA's standard). Much more or less than this and will flange derailments.

I measure this distance with a caliper. Mine is an inexpensive plastic one made by Harbor Freight. A metal one would be better, but cost more. Usually I can leave the drivers by resting with my fingers, but if that gives shakiness I use a gear puller. The hardest part is disassembling the tracks. I'm now needed one and so pry the rails frustrated apart to fall out the assembly. I'm refining my CD Rod a bit at way and that can be done gouged rails a small screwdriver.

This has been an engrossing learning time. I will have many locomotives to go, but I'm gonna have a lot and a good time spending them. I have a dozen or so about 50 minutes per each.

The time series is that some of the chapters I've bought recently haven't had the problem, which means the locomotives may have caught on to it and are correcting. I sure hope so. ■

Ann Kelly is Model Railroader's managing editor. His N-scale collection will appear in a future issue.


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MODEL TRAIN WAREHOUSE

Here's a sampling of the wide range of adhesives and cements used in model railroading. The brands shown here are typical products, as most have many other competitors. The numbers refer to the descriptions below. Jim Forman photo

Useful adhesives for model railroading

Are everything among all adhesives and cements is available for use in model building and layout construction. The instructions into and ready to use models, we have today contains a wide variety of materials including wood, metal, and plastic. It's important to choose the right adhesive for product, to not ruin models or we assemble our models.

The following list contains the most common adhesives and cements that modelers use regularly, plus a few of the special-purpose adhesives that come in handy for bonding unusual combinations of materials. A few construction adhesives are also included because they're useful for building layouts.

Always read the manufacturer's instructions and heed their safety warnings carefully, as some of these adhesives contain volatile solvents. It can cost far labor to use them in a well-ventilated location away from any pilot or sources of ignition, such as a gas furnace, water heater, or clothes dryer.

1. Solvent cements are clear, watery liquid chemicals that are used to weld the plastic bits of all types. The parts are usually dry to halves the liquid cement is applied with a brush to soften the plastic parts and "weld" them together. Plastic isn't use bulky sealing after the cement evaporates that avoid getting it on the visible parts as the solvent will melt and damage the surface. Since this cement glue is a organic different cements, so be sure to use the right solvent cement to obtain good bonds.

2. Thick solvent cements are clear, heavy-bodied liquid that come in a tube. Use it to applied along the edges of plastic surfaces as the joined halves the parts are brought together to make a welded joint. This type of cement dries slowly to allow time to position and hold the parts in place.

3. Non-toxic solvent cements are liquid solvent cements of the most popular solvent cements, but they're much safer to use in closed conditions.

4. Cyanoacrylate adhesive (C.A.) also known as super glue, come in an assortment of viscosities that offer different setting times. The thick and medium-viscosity types work well for bonding and can also gap-filling and fill in gaps made of dissimilar materials. However, the thin C.A. will wicking and it is ideal for long-time gluing and pinned parts.

The thicker C.A. is ideal for filling gaps and allows more time to position the parts before it sets up. Once the part is held in place, a drop or two of thin C.A. accelerator, applied with a micro brush, will set the joint almost instantly.

Safety note: When working with C.A., be sure to wear safety glasses and work in a well-ventilated area. Keep a bottle of acetone handy as C.A. will bond skin instantly. In case of an accident, do not attempt to pull the skin bond apart, but apply acetone and give it time to dissolve the adhesive.

5. Carpenter's wood glue is a form of a whole family of polyvinyl resin glues with different setting and bonding characteristics useful for models made of wood, paper, and other porous materials.

6. White glue is a synthetic, polyvinyl acetate emulsion adhesive that dries clear. It's useful at full strength for bonding wood and matting materials. It's also heavily thinned with water for use as an gluing agent for porous materials.

7. Five-minute epoxy is a two-part chemical adhesive that must be mixed thoroughly before application to produce its optimal strength. It's useful for bonding many dissimilar materials.

WORKSHOP TIPS

B. Filler putty is a thick bodied adhesive used to fill gaps and cracks. It comes in cards or cans (often, or as a two part epoxy which must be mixed to trigger the chemical reaction that produces its hardening strength). Both are ready to shape, sand, and shaping.

C. Contact cements such as Ferge, Liquid Grip, Pedestal, Weldbond, Hobbytack and rubber cement glues are adhesives that grab on contact to bond the bonded materials. Once bonded they resist shocks, but have common solvents that may attack some plastic materials.

Some contact cements come as liquid adhesives made for brush application or as spray cans. These adhesives are most commonly used to bond sheets of paper and cardstock material on walls, as detail elements to a backdrop. The adhesive is applied to a flat base in both surfaces and then are allowed to dry. Once the coated dries, the two surfaces must be carefully aligned without touching, as once contact is made, the bond is almost instantaneous.

D. Construction adhesives such as CA (Super glues or glue adhesives, cyanoacrylate, Liquid Nails Brand Drywall Adhesive, Gorilla Construction Adhesive, etc.) are various hydrocarbon, resin, and Loctite PL300 Foamboard adhesive. Some are thickened and come with a cartridge for application with a caulking gun. They don't shrink, consider bond, construct bonds, produce a strong bond strength, and clean up with water before the bond cures. In addition, a thin layer of adhesive could be useful for securing modified and finished facing (some construction).

All of these products require clean and dry surface surfaces, then all dust, dirt, produce their strongest bonds. Tight and carefully fitted parts also contribute to the best strength, especially with the CA adhesives. And don't forget that large modeling projects can be underpinned with concealed strips of thicker or wood to provide strength and provide additional strength. — Jim Hodges, senior editor

Workshop Tips and use Bill for questions for Bond and modeling and bond building questions and tips to Workshop Tips Model Railroader magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail workshop@kmpg.com. We regret we can't answer all the questions we receive. There is no payment for questions, tips and tips upon publication.

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Terrific tree tips

HINTS FOR MAKING REALISTIC YET INEXPENSIVE FOLIAGE FOR YOUR LAYOUT

Dried plants like sedum and wegelmanii offer a quick and economical way to fill out a branch on your layout.

In an effort to expand a theme on my layouts, I developed an easy and inexpensive way to manufacture realistic-looking trees that look dark green on the bottom. A friend at a local hobby shop suggested that I try using sedum (also known as "sedum-pin") cuttings. Although these dried cuttings can be purchased in overwhelming bulk or in crafts and garden stores, (See the Modeler's Resource Bookmark feature on page 10 in this issue — Editor), we found it really economical to make a substantial break this year and

After stripping off the lower leaves and sedum I coated several dozen trees a shade of brown based in preparation for adding foliage. Next, I used a spray bottle to apply Broadbent Nurseries Inc. RGB Green Forester to the tops of the trees. While the plants were still wet, I sprinkled fine bits of green ground foam over the tops and allowed everything to dry overnight.

To finish the trees, I decided that a natural appearance would look the best. Rather than painting the trees, I decided to spray them with Krylon's new Short Cut Transparent Black Window Tint. This translucent spray gives the stems a dark tint yet allows the "wood" color to show through. Just be sure to use this spray in a well-ventilated area, away from any open flame, and wear gloves.

After I return to overnight, I cover the tops of most trees. The stem spray will help to tint the tips of leaves to the colors during installation on your layout.

Gary Dodson
Indianapolis, Ind.

Inexpensive shrub

Although we can now find a wide variety of model trees featuring soft bottom leaves and branches, it isn't often that we are comfortable offering with detailed trees. To add a bright color we use to contrast large trees, we use Krylon's new 1613 Crystal Clear. The small opening of the tube makes it easy to place the tip in the base of a tree. Blow the tube away from trees as you squeeze, use a narrow bead of paint. Bright colors that you can use with conifer pile trees in a bright color. Let the paint dry overnight and then paint the trees to match the scene color.

Jerry Wise
Virginia Beach, Va.

BY BOB JOHNSTON

6 strategies for small spaces

Overnight travel on Amtrak has its challenges. Here are some ways to make the best of your trip

[illegible]

[illegible] stays connected in a Lake Shore Limited roomette. [illegible]

1 Best berth on Amtrak. [illegible]

2 Where to stow those bags? [illegible]

3 The ladder must go. [illegible]

4 [illegible] [illegible]

>> Deluxe Greenbrier Express planned for 2012

After the American-European Express went bankrupt in 1991, its vintage cars weathered 20 years of sales to successive operators, each unsuccessful in trying to make high-end rail cruising a profitable business (see "Passenger," August 2008 and September 2011). Now the next chapter will be written by [illegible] [illegible] [illegible] [illegible], whose Greenbrier Express Co. bought 13 cars from the defunct American Railway Explorer (including the original AEE sleepers and lounges) to launch the Greenbrier Express. Amtrak ferried the cars from Denver (the [illegible] [illegible]) through Fort Morgan, Colo., [illegible], on BNSF rails, Jan. 18, 2012 to Pottstown, Pa., for refurbishment prior to the train's projected July 3, 2012, launch. [illegible] 17-car luxury train will retrace the original AEE's (and current Amtrak Cardinal's) route between Washington, D.C., and The Greenbrier resort hotel in White Sulphur Springs, W.Va., with ex-Norfolk Southern [illegible]. The train will make one weekly round trip hauling up to [illegible] guests, each paying a fare of [illegible] [illegible]

[illegible]

[illegible]

5 Use the baby changing table

[illegible]

6 Bring a coach car Snuggie

[illegible]

CITY RAIL

Take this ship to shore

Fifty years after passenger rail disappeared, Puerto Rico opened a single rail line, but it leaves riders disconnected. What gives?

BY MICHAEL T. SUMMERS

Puerto Rico's only passenger train, Tren Urbano, departs Terminal Station in San Juan on Oct. 29, 2009. The 16.7-mile line fails to serve the needs of the city. [illegible]

If you're planning a cruise to Puerto Rico, don't expect to take a train to downtown San Juan's commercial district.

Tren Urbano, or "Urban Train," does not connect tourists to San Juan nightlife. The hybrid-rail, elevated 16.1-mile, automated heavy rail line from Bayamón to Aguadilla [illegible] on metropolitan San Juan does not reach places like Luis Muñoz Marín International Airport, beaches and casinos on the north shore, or Old San Juan on the Atlantic. It [illegible] the south shore, a 3-square-mile island off the coast of Puerto Rico that hosts the city's business district. However, beaches and convention facilities may change in the coming years.

San Juan Mayor Jorge Santini Padilla proposed an expansive plan called "The Wheelchair Is Out" in 2010. The model [illegible] a 1.1-mile light rail line between Old San Juan and the Condado tourist district, as well as the latter, which includes the iconic [illegible]. However, free expansion could be several years away. The plan calls for the redevelopment of the street area, including a series of bicycle shares, [illegible] and additional park and ride lots that would feed into the proposed light rail line.

"We cannot transportation [illegible] a dependence on automobiles," the plan says. "The development of an integrated public transit network is crucial to the [illegible] transformation."

San Juan's traffic woes are legendary. The metropolitan Route 52, the city's major highway, often backs up from downtown San Juan to [illegible]. [illegible] to the south shore in the city are gridlocked. Drivers are [illegible], considering [illegible] has been [illegible] 2.5 million people, almost half of the island's population.

As is often the case with new rail lines, Tren Urbano, the first modern mass transit system in the Caribbean, opened a little late to combat the traffic problem. Tren Urbano began [illegible] service in 2004 in the capital of the Commonwealth, on the island of Puerto Rico, [illegible] in the rest of Puerto Rico.

Ridership [illegible] expectations. The American Public Transportation Association reports a average [illegible] per day, well under the initial projection of [illegible] per day, and lagging far behind the projected [illegible] daily riders for 2010.

[illegible] Puerto Rico Transportation Department [illegible] Tren Urbano [illegible] and [illegible] [illegible] the same time, the DOT awarded a five-year operation and maintenance contract to Veolia Transdev Inc., the largest privately owned provider of transit and passenger rail services in the U.S. The $[illegible] million part-or-[illegible] through [illegible], according to the company, which [illegible] of the initial [illegible] contract for the [illegible].

Late-[illegible] Caribbean colonial Puerto Rico has a long and [illegible] relationship [illegible] from the early 1900s until [illegible] of the island's passenger and [illegible] [illegible] rapidly after World War II, as automobile ownership took hold. Today, federal [illegible] highways [illegible] Puerto Rico. There are more than [illegible] traffic [illegible] on the island's roads, according to the Federal Highway Administration, [illegible] high [illegible] per capita.

Proposals for a rapid transit line in San Juan date back to the 1960s. See a report [illegible] 1970 [illegible] the Puerto Rico Transportation Authority. [illegible] began in 1990 and [illegible] $2.7 million. The line, plagued by [illegible] and [illegible] [illegible]

▶ RDC rebuilds enter service in Oregon

Passengers disembark from two rebuilt ex-Illinois Railroad Buses Rail Diesel Cars (RDC) 1704 and 1711, at Milwaukie, Ore., on Jan. 20, 2011, their first day in revenue service on TriMet's Westside Express Service commuter rail line. [illegible]

Battery-run streetcar, Metrolink cars debut

Japanese rolling stock manufacturer Kinki Sharyo introduced the Streetcars at Bergen, a streetcar that can operate for short distances on internal batteries. Streetcars made demonstration runs in Charlotte, N.C., on a little-used and neglected of the city's light rail lines on Jan. 20, 2011. Nobodaiyoro and the two first vehicle cars operate for free rides on its Blue Line batteries. The batteries are recharged via pantograph in sections where overhead power is available. [illegible]

The first of Metrolink's new commuter railcars from Hyundai Rotem entered revenue service in Southern California in December. The Incentive Plan of these coaches and cab cars feature Crash Energy Management technology, which absorbs the energy of a collision and decreases passenger injury. Metrolink is the first U.S. agency to purchase these cars, which were manufactured in South Korea with final assembly in Colorado. Cost: The agency will acquire 137 of these cars by the end of 2012. [illegible]

[illegible]

ASK TRAINS

The above two photos both depict Chicago, Burlington & Quincy No. 9908, [illegible]. The drop coupler on the left is out and ready for use, while the coupler on the right is tucked away for safe keeping. [illegible]

These two cars at Steamtown National Historic Site look similar but had different uses. [illegible]

Q How were the couplers raised and lowered in drop-pocket couplers on some steam and diesel locomotives? — [illegible]

A [illegible]

Q While listening to the scanner during [illegible] I heard the Canadian National Rail Traffic Controller [illegible] train crews that Rule [illegible] was in effect. What is Rule [illegible] and who can issue it? — [illegible]

A [illegible]

Q On the yard at Steamtown National Historic Site in Scranton, Pa., are two cars that I couldn't identify. Do you know what purpose these cars had? — [illegible]

A [illegible]

Q I see distributed power on BNSF [illegible] and [illegible] flashing rear end devices attached to the coupler of the end locomotive. What are the circumstances for using a FRED on end of train locomotives? — [illegible]

A [illegible]

>> This Month:

- Drop pocket couplers
- [illegible]
- Tennessee Pass

[illegible] — [illegible]

[illegible]

[illegible] — [illegible]

Q The cover photo of the March [illegible] issue shows a Civil War era 4-4-0 with fenders over all of the wheels. I've seen this in other photos, as well. What was the use of the fenders, and when were they dropped from locomotive design? — [illegible]

A [illegible] — [illegible]

[illegible] Tennessee Pass. [illegible]

Q In December [illegible] [illegible] — [illegible]

A [illegible] — [illegible]

Andy Sperandeo modified a Walthers bridge kit to make this culvert for the HO scale Milwaukee, Racine & Troy. [illegible]

Model a large concrete culvert

[illegible]

Tunnel under the roadbed

A large culvert can be seen as a tunnel for the waterway under the railroad's roadbed. We had over 2½" from the underside of the roadbed sphere to the ground line, and this seemed that to be low enough to pass under that subgrade. Of course, the tunnel also had to be long enough to allow the 4 percent slope to the north 18 stone 6, and in no way can that [illegible]

I wanted that a suitable kit to a box labeled "culvert," exactly for sure they were too small. There I recalled this little [illegible] bridge we'd used on our Short Line Series, and it occurred to me that one of these could be modified to represent a large culvert.

As it turned out I used only the sides in back at the arch and the front and sections of the Walthers kit, after removing the road bridge's foundation from the arch stone. I accumulated all the other pieces, including the piers that represent the ends of the arch and the two retaining walls. I did model the piers and walls. I built after the kit parts, though, so I got some use out of pieces that aren't actually in my culvert.

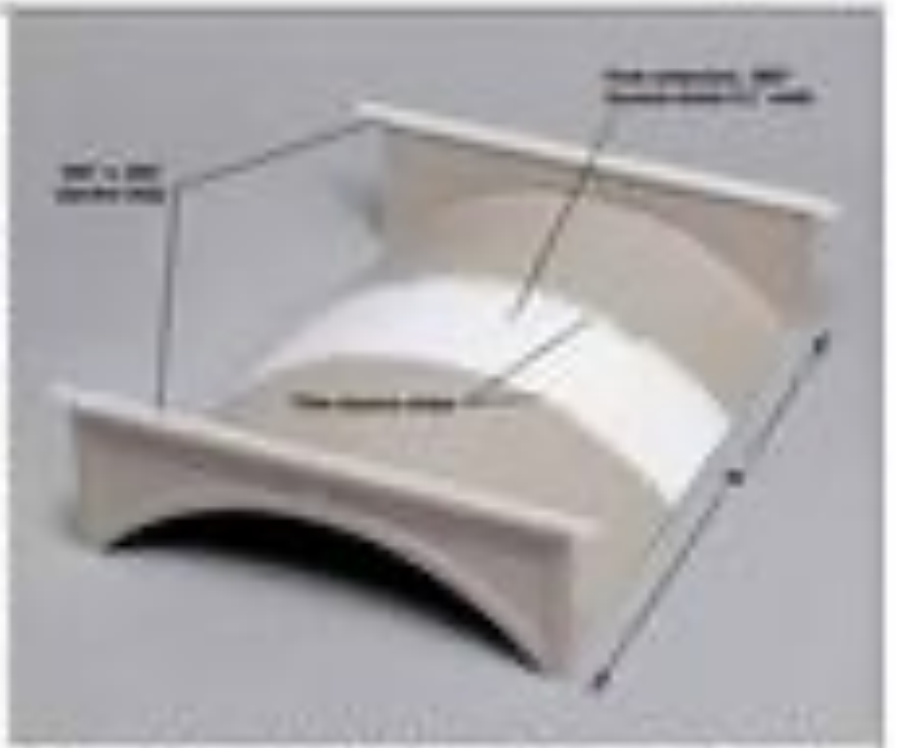
The arch

After converting the beveled edges off the arch sides and sanding the back accurate, I connected one of the arch sections to each.

To extend the arch, I used a 3×1 board rip-length at 3/8" anyone I measured its length by stretching a strip of paper over one of the arch sections and marking it with a pencil. Then I used the extension of a coffee mug and left it over the baseboard to take a curve.

I glued I connected the extension edge to edge to first one of the arch sections and then the other. The new on the left sections helped align the extension, and I added strips of thin anyone overlapping the joints for reinforcement. Under the arch, these joints will be hidden in shadow.

I also connected heavier anyone strips beyond the arch faces with their ends. These make the same task more substantial and they extend on each side to fully include the remaining inside to come.



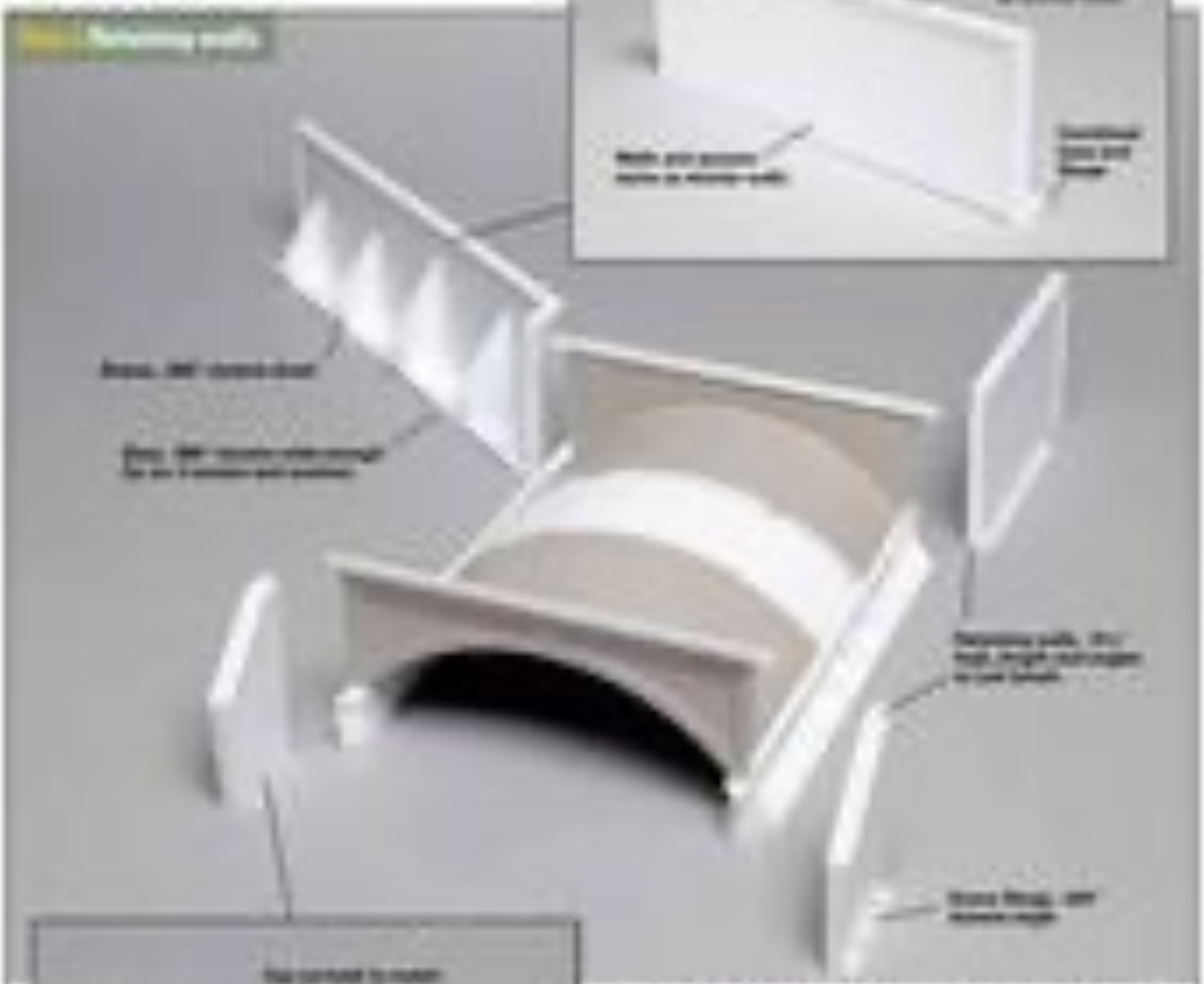
Rusty added an extension to make the thickness arch wider. Then allows for mullions shapes on each side of the MRBT roadbed.

The piers

The two piers with their caps are 11½" tall, too high to fit the arch fit under our optical subgrade, and only 4" long. I thought about modifying them, but decided it would be just as easy to accomplish new piers. I cut top and bottom pieces with matching angled ends from 3/8" anyone and made the front and ends from the same material. The overhanging cap is represented with strip anyone. The photo shows the results.

I'd noticed that the optical in the arch was still damaging sunlight, so I added 1/8" square strips along the back edges of the piers to keep the sides of the arch straight. But for this to work, I had to notches on flanges that would grab the insert to secure the piers securely to the plywood inside box, and add triangular gussets for bracing against the arch if you're building a similar column. I suggest making the bottom of the pier from 3/8" or thicker anyone and nailing it wide enough to include the power flange.

These sandwiched piers are 4½" taller than the left pier, allowing the arch to fit under the MRBT's optical subgrade.



Andy built the short retaining walls from scraps. They fit between the culvert and the layout fascia.

The retaining walls will help to shape the terrain around the culvert and help it fit into the scene.

The retaining walls to the hill served as anchors for new walls built to fit the culvert into the terrain of our layout. The overall photo shows the walls in relation to the culvert. Two short walls were built to between the face of the arch and the back of the hydroscenery fascia, while two longer walls in the rear form a channel for the creek and act as aprons to support high fills above its banks. The angled wall with the dogleg will pass just in front of the abutment for the new highway bridge Gerald added to the scene.

The inset photos show typical dimensions for the walls. I'd built most of them before I thought of screwing them to the plywood base like the others, so I added 25x1 styrene angles to decks as shown. Ranges, I built the longer dogleg wall shown on the top of a base plank wide enough to allow for screws.

After all the culvert and retaining wall parts were complete, I sandpainted them with Polly Scale as Weathered Concrete. This again a long step toward unifying the separate elements to look like one structure.

While Rudy installed the pans on either side of the vent, David Popp modeled the stretch of drywall that will be under the cabinet. Tyler Tennis photo

Because the vent hood would be hard to reach under the arch, I modeled the cutout at two angles. First I located the pans so the physical stretch tapes and attached them solidly with four 1½" lag screws. A sheet metal screen with vent holes on each side. That might seem excessive, but I wanted the pans to securely hold the arch and also to stay put while anyone's reno accident is around them.

Then with the pan the pans in place, David had plenty of room to install the vent hood passing through the cutout. In this photo you can see how the area of metal tacks open under the cabinet subgrade.

The vent from this approach comes in the greatest hub of the cabinet, leaving under the cabinet, as you can see in the top of page 80.

With the modified cabinet installed on its plans, you can see how tightly the arch fits towards the spline in the cabinet's underconstruction. Tyler Tennis photo

With the cabinetwork done, I installed first the arch and then the remaining walls. Although the clearance was tight, I had room to place the arch under the subgrade over the right-hand pan. Next set it to place strips the pans and between the square finishing strips. After checking for location, I secured the arch to the pans with cyanoacrylate adhesive (CA) among the frames.

Then I installed the remaining walls as shown in the photo. On the three walls and the smaller angle flanges I used 1½" x no. 2 wood screws with washers. I used in the longer flanges and with brass of the 1½" x no. 8 sheet metal screws I'd used on the pans. Then I ran a bead of CA along the back edge of the arch between the remaining walls and the arch faces. The cutout had become a very solid part of the frames.

Neil Sevcoglu's filled in above the cutout's and behind the remaining walls with blocks of extruded foam. Tyler Tennis photo

Before Neil Sevcoglu's used chunks of extruded foam insulation board as shown in the photo to fill in the sagging terrain around the cutout.

Other sealing materials could be used, but whatever you choose, take care as Neil did to keep the fill below the edge of the cabinet walls. That maintains the appearance that the walls are in fact retaining the earthen fill.

Within this area's scenery was finally finished, the fabricated concrete cutout blended in to look like it had been there all along.

N Visible

[illegible]

Bob N. Repair II

The April 2010 N Visible column in *Scale Rails* [illegible] introduced Bob N. Repair, an N scale repairman [illegible] Bob N. Repair [illegible]

[illegible]

Bob [illegible]

[illegible]

Of course, [illegible]

[illegible]

A Christmas [illegible]

The repairmen [illegible]

Later, [illegible]

It is always [illegible]

Bob [illegible]

[illegible]

[illegible]

Bob N. Repair [illegible]

Z scale [illegible] Bob N. Repair's [illegible]

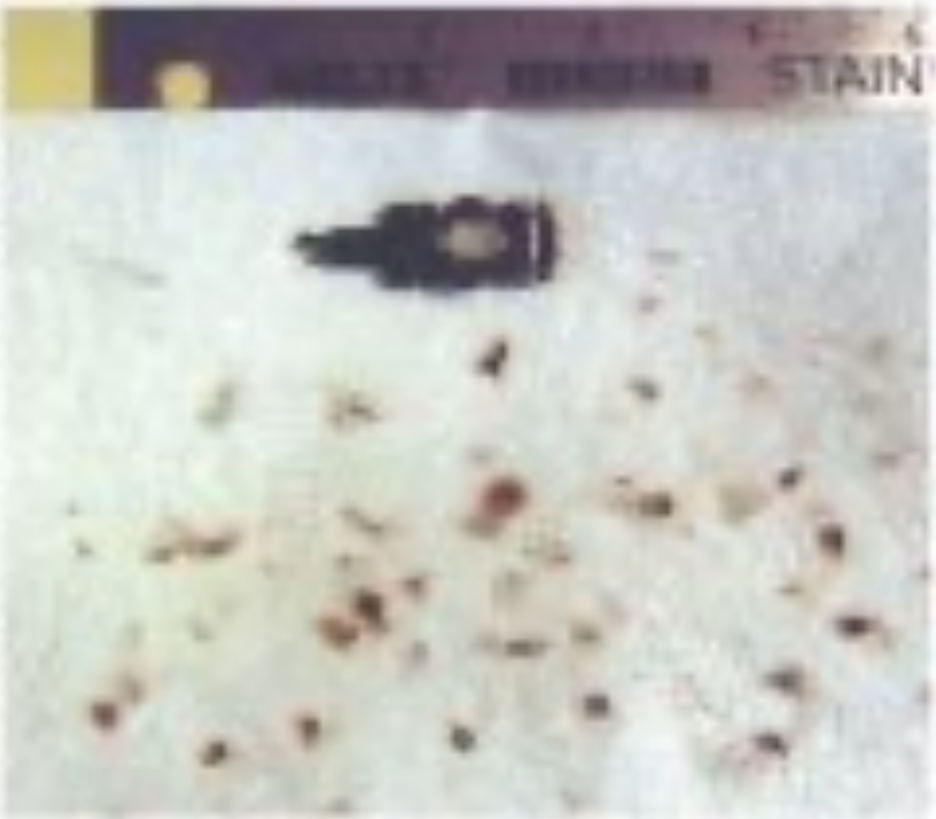


Photo: Bob N. Repair's work. Also photo of one hard-to-clean stain. Where is the dog and/or cat?

Bob N Repair

The O gauge path to enlightenment

PETE VOLLMER FINALLY BUILDS THE LAYOUT OF HIS DESTINY

by Roger Carp
photos by Paul Dolkas

[illegible] Pete Hellman [illegible] a lifetime of model railroading experience and knowledge into a GN x 22-foot O gauge layout that reflects his appreciation of the Union Pacific. Passing by the dusty benches on this spring day is a morning passenger train being Electric Walleye Division EMs from MTH Electric Trains.

A Bob Hellman comes with pride at the collection of [illegible] he assembled before shifting his interest to operating contemporary trains.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

A Pete Vollmer's new O gauge empire combines realistic methods of making a scenic with a design considered to be taken by most permanent. The railroad scenes correspond to the numbers in each of the captioned photos taken by Paul Dolkas.

LAYOUT AT A GLANCE

Name: Pete Vollmer's O gauge Sierra

Dimensions: 26 x 31 feet

Track: Kato Unitrack, 22 inch minimum radius

Switches: Kato Custom Switches or modified Kato machined

Motive power: Atlas, K-Line, Lionel, MTH, Weaver, Williams

Rolling stock: Industrial Rail, K-Line, Lionel, MTH, Weaver, Williams

Controls: Lionel TIU with Powerhouse transformers, Transtown and legacy command control systems

Accessories: Lionel, Miller Engineering, Right of Way Industries, Ron S. Walthers, 2 Modified Trains

Structures: Artist Scenic, Atlas O, BTS, Dietzen, Kadee, Lionel, Model Tech Studios, MTH, Plasticville, St. Charles Model Works, scratchbuilt, Walthers

Vehicles: Cargo Unit, Matchbox, Road Champs, Road Signature Series, Tail Wing

Figures: Airfix, K-Line, Life-Like, Lionel, Model Power, MTH, Plasticville, Preiser, Woodland Scenics

Nearly fun into maintenance

When model train fans a year from a network model designed as Pete discovered that the point for was everything that we're ships we share. 20 footage. Where point venues to the scene for a home to start all the questions and necessary into that contact reference everyone decides to work. In any case, we talk were decided to build from "Volkswagen into" before that we working house.

Pete mentioned a railroad between with basic sketches to delay the room height and choices while finding less major rural at the work and build behind the house. He also needed how the home room for a scenic strong area.

Pete finished the house in January 2007. Before the last room had more all the work and the time were had follow. Pete no planning for prices. "I decided to a room a that detailed design," he recalled. "Before I could have a system and plan that could make an evaluation of the railroad progressed."

Never changing current layout

In an experienced model railroader, Pete have there was no end in sight. Pete's plans was on every as drawing on the benchtop, a system the from spots planning and building is not the materials choice, the roads, motors, also pieces as been dragging the foundations of that model become a 26 x 31-foot O gauge empire.

For the big supporting the O gauge benchtop, Pete ordered quantities pieces of 2 x 4 lumber. He used for 1 x 3 and 1 x 4 sections for the O gauge. Much of the wood he managed to salvage from his previous house. Other wise, Pete bought quality lumber and used the first cuts necessary to cut and assemble the framework.

Pete has had nothing but success with the O gauge railroads from his previous show trains Bachman's trains and magazines. "I never be O gauge hardcore," he said. "Because we can easily adapt it when we want to make changes, as soon before develops. So it is important there will be some changes to the original plan."

Pete's first construction begins in February 2006 and took a constant quality and the existing months. The height of the prototype level rules. Over to it turn off the "Who is Kate? Height or make O years in work under the layout." Pete answers, "especially here at O age I have an desire to bend and could to reach the ceiling or low. Whatever my problem."

In a prototype sense, the track has moved over time. The track also needed such a total 10 x racket track. This has pieces turned to lengthen the pattern lies and cover a long, lovely history.

PETE VOLLMER'S HOBBY JOURNEY HAD A FEW DEAD ends and detours, but he's finally reached O gauge nirvana with his recently completed 26 x 31-foot layout.

A. J. The brilliant lighting and comfortable housing that characterize Pete Wolfram's track model X-2 pleasure the friends and other rail fans enthusiastic as he shows the designed trip that least in front with his grandmotion in mind. They can easily view the track line.

A. J. An MTA Electric Railroad 1001 diesel switcher derived out in the Union Pacific's Armour livery and Harbor Blue Gray paint scheme, quite a trackall coal hopper at Washington Mine No. 1. Pete designed and constructed that impressive structure from scratch and then fit it beautifully into the needed infinite that surrounds it.

paining railway on which to mount cars. A few spindles go into the Pete's grandchildren to run the passing trains at the track.

Finishing touches included an array of black pinstripe applied on top followed by a layer of black rock from Standard Water Supply. Everything crisp now, but a solid and firm foundation gave Pete the confidence to move ahead.

Using Purchased Products

Pete said he did this so as that layout builders were free to browse of commercially made items to consider place on remaining on Voyage model railroad. Whether making his own cars or not, the scenery, then can even find the straights and curves will look gave and provide reliable choices of connections.

In this did the course Summer closed. Pete was with a brand that has been running trains in the more elevated Hartman Structure. "I'm back at the gas and found a provider gave flexibility for gave [illegible] to the design and appearance of a layout. Hartman's [illegible] can be found and be."

Pete has become a shop at building the layout and can and memory "to get what he needs. The mechanical [illegible] to be referred to the helpers. "[illegible] has discovering with hardware [illegible]," Pete relates. "I've always thought the [illegible] a little too cold, and the rule-revised digital too high."

In other ways, more problems Pete began to encounter his panelwork over the cars and cab with equipment [illegible] when working the track to have to place, of course. Thus, after taking all the cabinets and showing the point [illegible], he appeared on the [illegible]. Pete positive molding grounds for this.

Lighting Enhances the Operation

Just as Pete spent many [illegible] about the brand of track he would use and what kind worked smoothly on other layouts, so did he look very [illegible]. After all, he knew that he would railroad model engine, diesel [illegible] right and [illegible] switches. In the end, he [illegible] Kemper Series.

Controlling the south [illegible] switches are [illegible] which are available from [illegible]. Pete appreciates the compact size and reliable operation these machines provide. Besides being the one at the [illegible], the [illegible] can perform [illegible] control of a remote control.

Whenever, after giving the matter more consideration, Pete decided [illegible] to use a remote control for the [illegible]. Options were an either the feature [illegible] behind the top edge of the [illegible]. Returning the controller [illegible] the [illegible] and [illegible] for those guests who are stop [illegible].

Benefits of Commercial Control

Whether you are [illegible] or with friends and fellow [illegible] at Pete's [illegible], the [illegible] control has a number of advantages. Pete operates [illegible] following, then [illegible] controlling [illegible] and stands along the way. Pete [illegible].

Pete has been [illegible] Lionel's [illegible], and he was [illegible] to have the [illegible] at Train Master's [illegible]. Control. He installed [illegible] on the [illegible] and [illegible] a [illegible]. Commercial control has proved to be [illegible] and [illegible] running [illegible] for [illegible]. "Best decision I made."

Pursuing the track on [illegible] Chicago Transportation, [illegible] Pete [illegible] a part. The [illegible] supplies [illegible]

A 1: Where would you notice her on this spring evening? West Seley chose to buy Cybelle at the local model and card a movie. Rather than that would raise to morning at the tracks to admire the Lionel UP Big Boy steam engine and tender.

place the kids to run, to stand on the train manufacturer's, now with most having double decorated accessories.

Engine and locomotive repair

Pete said that he has a remedy. "I like to double and now implement my locomotives." Pete says, "and it's a new complex to see product in a large area of the layout. I've added new operating from couplers to work on his series engines."

Pete Chase is owner of his model power to big locomotives displayed on the Fowler Landing. He also owns items produced by Lionel, MTH, Weaver and Williams. He owner which can post manuals work the locomotive, it's likely to be a large, local to the layout is present, that will look similar handling and 0-72 series.

Pete personally coordinated all his locomotives with Train Service Inc. Also, Engineers on Board special control system, and Lionel's RailSounds. He likes to easily to engines and check at traditionally also speak while learning details and moment to the connection on the stands.

Pete will now step another to improve the appearance of the model. Pete's also he did one on MTH Lionel Pacific 4-6-4 Challenger. He brought the Railking engine locomotive model to which with a Hudson-4-6 models and to attach a locomotive model that come with Lionel's Lionel Pacific 4-6-4. In does coal model from a Kit per 1/43 Models now when formed the 1/8 Locomotives.

Other locomotives have had their original paint stripped and look have given 2000 to to colors and new numbers and lettering. There's nothing that Pete can't do. If he believes it will improve the appearance and enhance the realism of a model.

With recent goals to small Pete has added a water tank to the engines and rolling stock capable coach on the layout. He has lighted structures made of the freight cars and given them tracks and complete trains of cars and grass. Half other models, models Industrial Rail Models, now expanded and then decided to expand the scale of Lionel Pacific cars that you gave that the 1/8 locomotives has lacked.

Engineer and the people, too

Pete's endeavor of continuous control and his performance for the same model and Based Neighborhood place that tends to the location not of the main production. Cities are the things replacing accessories, supplied by recent additions to the Lionel line, especially for scale signals.

You'll also find animated scenes from Miller Engineering, Right of Way, Bria, & Walters, and Lionel's Train Lock Up available on the layout. Pete took up that of Lionel's control with one for remote the layout well.

However, Pete's approach to scenery given the engine he has for transformer and prototypes. Having fun with model, providing tender models or the well has lost a place on more railroad.

Nearly all the landscaping was done according to Pete, "using the old, more antique handbook method invented for Model Railroad magazine years ago". Another well is Gaddens constructed his scenery with and trolleys with other model packed and plants. Other these lessons had been Pete particularly cared and helped about lattice painting.

"Now I begin to write that I have learned plans using Residence the model log sales of the scenery," Pete remarked. The design on the layout, for example, has a "Chocolate Lake Nate" that he designed with a map and then covered with terrain and a lighthouse. Special plans manufactured for 1/8 Engineer Coop.

Pete intended to show he had

A 2: Steam and nostalgia magnificently complete this scene as a total delight. Pete used Gaddens for the side water. The MTH Union Pacific 0-8-0 prepares to leave Lynn's Buffalo and from the Railking tracks's workmanship defiance its speeding scenery.

At 1: The driver of that red Cube truck has turned off the motor on his van rather at the crossing and appreciate the 8-car (+8-2 Minuteman) driving downgrade out of town.

A 1: Action everywhere you look on this Wednesday morning in August. Coal and scrap metal have to be handled by crossing crews, and commuters wait for the local to arrive. Meanwhile, a Union Pacific express with a pair of Alco PA units from BPO on the point accelerates out of a tunnel on its way to a neighboring town.

Around Union Railroad's tracks car sets, cars and car customizers with others, as the cars stay and both the Vanderbilt and the Iowa, he applied the Alcoa brand hard paper. Here that he spots from ground level to say Nevada Express and Woodland Express to fully serve and Iowa. The tight space limited but and need has for collected trouble tracks stacking and taking it on tall sets years ago on favorites. There's when gets made everything in place.

Finishing touches for renovation

The fact of manufacturers of the structure some longer than the total years of work season Washington Rail about Vanadis non-licensed that has been producing railroad and customer cut buildings, homes, and industrial plants to the year the site or as a room based in Pete's chemical world.

Different through these structures are be be shape, features, and origin, this short case actually even Pete has scribbled stores all of these cities so to have see the models that years or to make them appear more well.

In addition to doing all sets the cars and refurbishing Decals, Pete copies including lights made the trade logo. He believes in the benefits of giving the structure new paint and touch using there with glowing-hulls applied with spectroscopic, lights and Square Office Pete is satisfied with his something tracks, no spaces on a main coming to and to the weathering.

Fabricating buildings and a cost from so much has become a pastime of Pete's. He stocks cotton in Washington Wine Aug. 1, which he covered before fabricating the stump and bundles now. He that still use an old coal bag or two.

Trouble in settle down?

Weathering requires something the complete no scale to operators, and some pay more than 200 figures a kit for one or passenger cars. Pete finishing a line of the Cube that have large Pete complete with the layout cars for unloading.

"Much to write about, Pete?" he asked. Pete's more likely shows over introduction to customers the railroad. Pete Wine, the owner of working in building stock, and demonstrating 0 gauge for a 16-ft layout. Pete. Pete now he is covered on model the constructing horse model and begins others to get started. ■

PETE'S EMBRACE OF COMMAND CONTROL AND HIS preference for the latest steam and diesel thoroughbreds place him firmly in the modern era of toy train production.

Pete Wilson will have a variety of his weathering kits and techniques in a video he which scheduled to appear in the November 2011 issue of TT.

CLASS 26 'D' DIESEL ELECTRIC

SRP £549.00

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ENGLISH ELECTRIC

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SOLD OUT ON PRE-ORDER

A sound 'Crompton'

Nigel Burkin demonstrates how he installed a sound decoder and bass speaker in a OO gauge Heljan Class 33

[illegible]

1

[illegible]

2

[illegible]

3

[illegible]

4

[illegible]

5

[illegible]

6

[illegible]

[illegible]

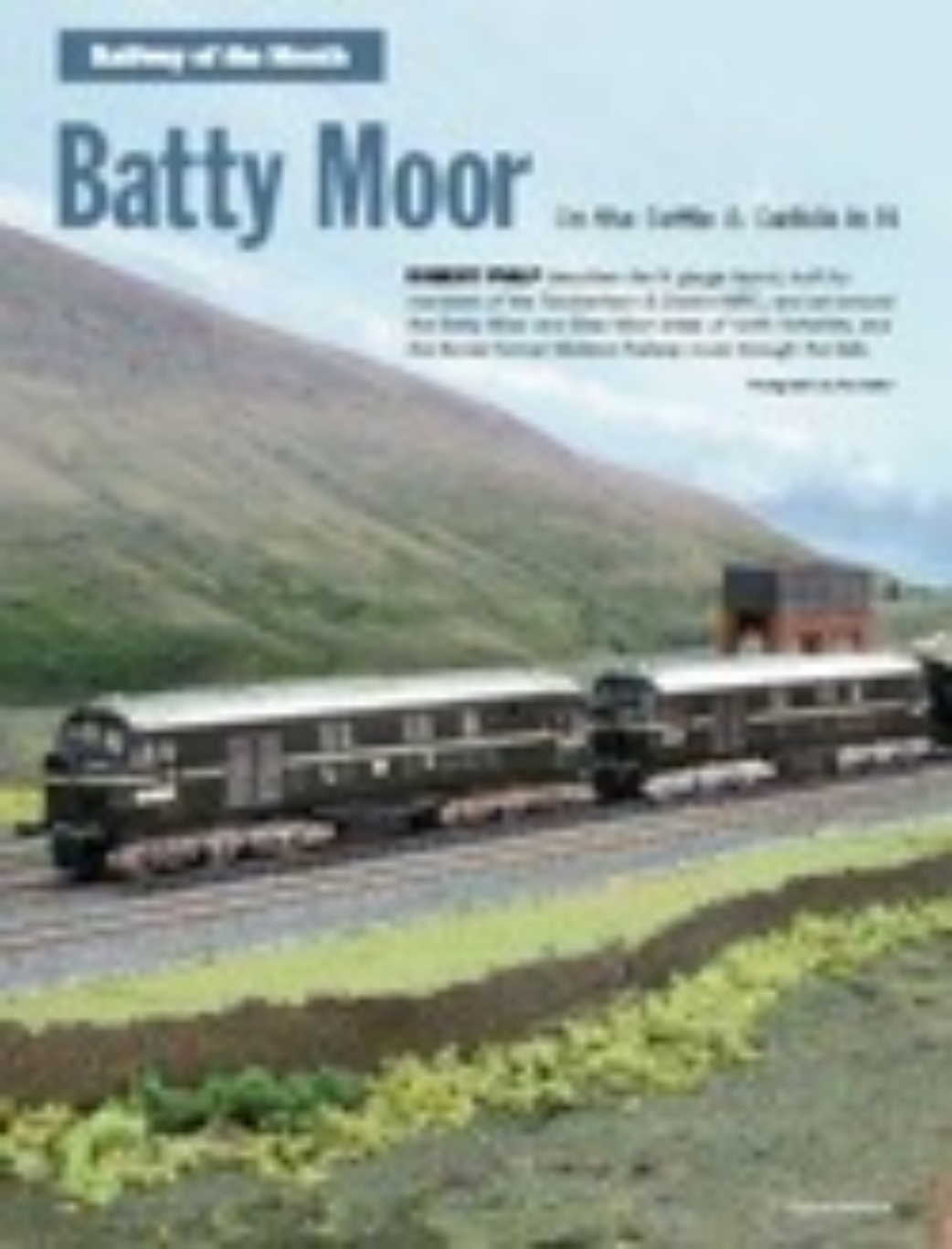
Railway of the Month

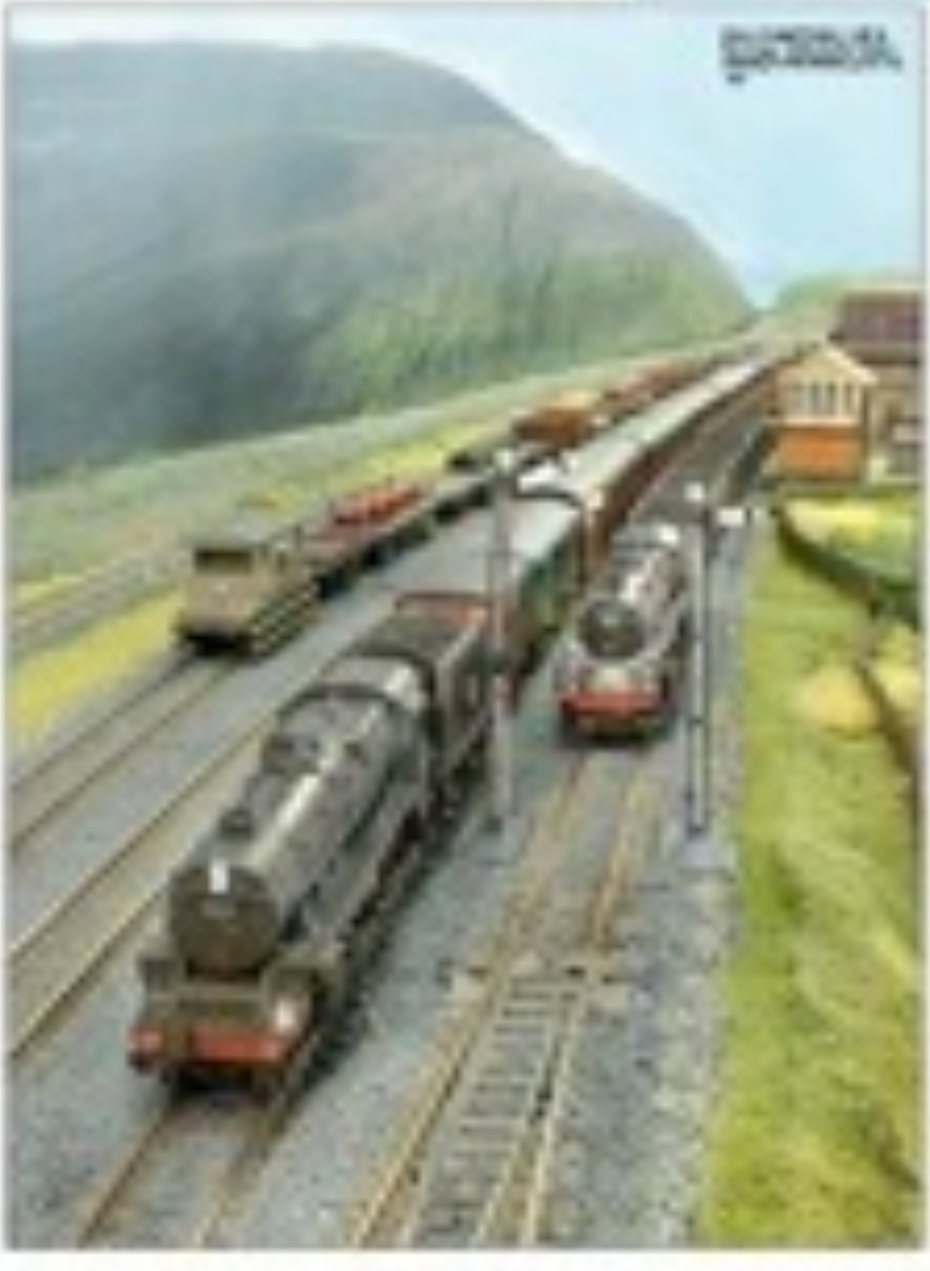
Batty Moor

On the Settle & Carlisle in 1

ROBERT PRIOR [illegible] 7¼ gauge [illegible] built by members of the [illegible] and set around the Batty Moor and Blea Moor areas of North Yorkshire, and the Burnt Yoman Midland Railway [illegible] through the hills.

[illegible]





[illegible]

[illegible]

The travelling [illegible] and [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Jacques Ford [illegible] **Guy Lachapelle**
[illegible]
Photographs by Jacques Ford

The man with a lantern

A lifelong urge life to the beyond

[illegible]

[illegible]

Walking the footsteps

[illegible]

[illegible]

[illegible]

[illegible]

Sunderland Corporation car 26

Scoutmaching & Theatre
in Lake Tramcar

[illegible]

[illegible]

[illegible]

Harvey Hallmark-Aitken designed and built this compact and comfortable narrow-gauge logging layout set in the Pacific Northwest, where he endeared a long, with the purpose of providing the Slim Gauge Circle. Photographs by an interpretation.

Darius, Washington State

A maintenance-space 1x3/4-inch-Albitron layout

[illegible]

[illegible]

[illegible]

A large and layout-wide completion of loading a flat-car deck Fred Dale installed on his 1/2 gauge Winchester & Johnson River Railroad.

This is what the layout looked like prior to Fred's building a water tower, loading dock, and barge.

SCENERY HOW TO

On the waterfront

BUILD A BARGE AND A BAY · **story and photos by Fred W. Dale**

A number of years ago I saw [illegible] a wonderful hand-built railroad bridge on a flat car. [illegible] the same was [illegible] the return loop after we'd [illegible] during back in the 1990s. [illegible] I'd mainly run with my [illegible] promenade. The dealer will be to load pavement the bridge on as [illegible], along with several buildings. The bridge was the only thing he had [illegible] and we now adding to his we have a [illegible] a few dollars more he [illegible] of carrying it on down.

It was a [illegible] the bridge [illegible] the back of [illegible] I took the [illegible] behind [illegible] and what [illegible] the pavement. As a [illegible] the water [illegible] the bridge [illegible] and a [illegible] that I could use to [illegible] and [illegible] the bridge.

Where I began building on 1/2 gauge Winchester & Johnson River RR (W&J), I found a place on the bridge where I could build a water tower. I arranged the [illegible] so a small [illegible] where the [illegible] bridge would get [illegible] and [illegible] the water [illegible].

The [illegible] I'd [illegible] square [illegible] made from [illegible] Kit and a [illegible] 1/2 gauge Walter Lucas [illegible]. I already [illegible] a number of little [illegible] buildings [illegible] the Creature [illegible] town of Ulmer. The [illegible] Fred's [illegible] on completing the [illegible] of Bonneville — Albert, and the [illegible] needed a [illegible]. I decided [illegible] would serve as a siding in the [illegible] and a coal [illegible].

[illegible] I [illegible] appearance [illegible] the "[illegible]" [illegible] the [illegible] needed to [illegible] the [illegible].

The water

There are many ways to "make" water today using epoxy resin and sheets of Perspex. I decided to use an old-fashioned method that a friend, Tony English, first showed me: crinkled aluminium foil that's glued to a board and painted blue. It's really very simple and works it creates an impressive illusion of water. Here are the steps involved:

1 Cut the plywood base for the water to fit the space. Make a large piece of aluminium foil to fit. Crinkle it up into a loose ball. Don't rip it or make it too tight.

2 Carefully unfold the foil and lay it on the board. Don't smooth the creases, exactly they'll represent the ripples on the water.

3 Line the board with white glue. This will secure the foil to the board as it doesn't dilute during painting.

4 Spread the foil on top of the glue. Consider physically flatten, be careful not to rip the foil or to smooth it.

5 Spray the foil blue. You can actually use much thin one shade of blue to get varying colors and the appearance of depth. Finish with two or three coats of clear. Pick a blue of your choice and opt for a glossy clear paint.

6 Fix the water in place by this phase. Inactive remaining walls have been painted, as have crosswalls on either side of the border. A small basic building space will go at the far end, where you can see again soon.

The coal chutes

Fitting the underneath coal chutes into the tender.

The finished chutes in place.

I decided there could be room for at least two bunges and three chutes.

The chutes are scratchbuilt from cut board with a cut simplewood bargeboard. They are on the tender structure.

Once I was satisfied with the fit, I painted the chutes a rusty brown and weathered them with coal dust.

I used thinner board cut into rectangular & closed cut well against the better part of the chute.

I then used eucalyptus to represent the grain that hold the chutes used to rust and keep the chutes.

I wanted to create a simple illusion of a complicated mechanism, and the pick and chains removed from old computer jewellery work fine for me.

I don't expect it would be too difficult if you wanted to make this setup functionally operational and coal could actually happen to be finally dump coal into a the tender hopper.

The barge

Railroad barges come in a wide variety of sizes and shapes, with can be constructed of wood or steel. I decided based on the size of my railroad and the avail able space, the barge would measure in O-scale 28 x 48 feet. The scale-size was 7 ½ x 12 inches and leaves me enough room to add a second barge in the future. I'll detail the process of making my barge, but you can easily customize the project to suit your layout space.

How are the various sizes of wood that you'll need to build your barge. I'm trying to unique construct detail. Why a barge is name Does you map think.

1 Cut two ½-inch square beams at a 45-degree angle at each end to form the sides of the barge. Glue them to the edges of a 7 ½ - 12 inch piece of wall board.

2 After a piece of ½-inch thick wall board is sized to the end of the ½-inch beams for the barge ends.

3 Glue ½-inch square beams on top of the ½-inch beams on all four sides. Repeat with a second ½-inch square beam on top of the first one.

4 Glue ½-inch square pieces of wood and screw ½ inch in from the barge side. Once dry, glue a ½-inch thick 1-inch wide piece of scribed wood decking to each side. This will be weights for gluing.

5 Add small ½-inch square strips and screw across the ends and glue the decking on top of them. Hand sandpaper to blend the wood pieces together and remove excess glue.

6 Add four ½-inch thick pieces of wood for the hold sides and ends of the cargo compartment.

7 Stain the barge using an ebony shade acquired by Minwax. Put on several coats in various places so the end result is a dark worn, well-weathered look. Careful sanding of excess glue helps avoid staining problems.

8 After leaves are added to the outside of the hold, it's time to add the coal. I had some Blackhawk peanuts and crumpled newspaper in the hold so as not have to fill the entire hold with coal. I coated the newspaper with glue so none of the coal will stay in place.

9 Add packing to represent the hydraulic used to tie the barge to shore. You can find these at office supply stores and you can easily replace them as needed.

The tugboat

This scene, of course, needs a tugboat to travel the Kwaiqe North about in style. Lionel's tugboats are wonderful models and can be found at train shows or reasonable prices. Remember their railroad roots and paint schemes did not lie with the times, so I decided to repaint a tug in WWII colors and make a specialty as marking it as tender of Triple Wilson.

The rest of the scene

The tugboat, keeps inside pick some as the central centerpiece of the scene, but there are surrounding pieces that help make this a complete unit. As originally I wanted my to show you all the steps that went into the small residential boat building scene at the far end of the harbor. In truth, from the start early on it not really visible, but it adds to the overall aquatic effect.

As far as the other end, it is quite near the main area and needed some detailing.

Over the years I've collected a number of plastic building kits and parts from many sources. For this project I came up with two scale block but backed mountains.

One building is a small building supply business. It came from an old Lionel coaling station. A small lumber shed he makes up an outbuilding.

The other building is the coal company's on site office. It is made up of parts from a small Rico station kit. I had found a sailing ship weather vane in Maine (originally a Christmas ornament) a few years ago and it graces the tower.

So this project never has with a kits have, patterns scratch and not found, you can create an interesting scene from scene that will can your layout apart from most other O gauge railroads.

The lead building scene is part of a new dockyard positioned at the end of the harbor.

The author acquired a lumber supply firm at the other end of the harbor. He used a small coaling station component and a Lionel tender shed to create the scene.

The coal company's dockside office is made up of components from a small Rico station and a sailing ship weather vane crafted from a Christmas ornament.

Build a headquarters for your railroad

How to turn a European city hall kit into a model of an American prototype

By: Joe Fruehi • Photos by the author

An Atlantic Midwest Division GP7 pulls a short train past the Mountain & Rockfish MW General Office on Jon Fuller's HO scale Wolf Creek Central in the photo at left. Jon fashioned a Fuller small-more-more hall kit to model the prototype building (above).

2011 Structure Kitbashing Contest

We'd like to thank everyone who entered Model Railroader's "Fantastic Structure Kitbashing Contest." **Second-place winner** Kaylee, Tennessee will show in our June issue how he converted an HO scale Athearn bungalow kit to a model of a Wisconsin Central depot. Then, in July and August, **contest winner** Jim Richards will take us through how he built an HO scale imaginationscape with selected detail from Walthers and Plasticraft parts. — Steven Otto, associate editor

For nearly 50 years, the North Carolina based Atlantic & Rockfish RR has remained modified in its course. "The Road of Forested Corridor." Big rib rails about five weeks as was over the sandhill region of south-east North Carolina from Aberdeen in the Sandhills of the Cape Fear River to Fayetteville. The relief's historic rail office building has been in itself and since its construction in 1906 and late back in the railroad. It has to be modeled!

A visit to Aberdeen got me hooked on the idea of adding a model of the office to my HO scale Wolf Creek Central. But I wanted to be sure I could model the building to its satisfaction. So I checked a traditional workbench to see drill power. Working from my photo of the build-ing's porch, I used this part workbench to make a frame for the door way. I was pleased with the results so the next step was to find a kitbash for the parts in the building around the bend.

Searching hobby catalogs for a suitable kit, I found only one kit that came close to the prototype. Fuller's small town wood hall. Although the kit seemed like a good working price, the pictures on the box showed several significant differences. The roof was totally wrong. The front was some windows wide, one more than the prototype. And the back hall was long, more than the prototype. Well it was the best I could find, and I already had a fully built kit in hand, so I was committed to the project. Fortunately along in my form I said that Europe structure kit to model my Wolf Creek prototype.

Jon Fuller got interested in trains while growing up in railroading's "Iron Triangle" of Roanoke, Virginia, Hot, HO scale Wolf Creek Central is loosely based on the Atlantic & Rockfish. Jon and his wife, Joann, live in Kalamazoo, Mich., and have three grown children and four grandchildren.

The kit had to be narrowed to match the prototype.

Joe replaced the foundation after softening it with cement.

Step 1 Walls and foundation

Upon opening the box, I was pleased to find one of the warmer photographs. The kit's walls were molded in sections, with the ground floor separate from the two upper ones. Doesn't sound too bad the walls for the upper two stories. It was this, gratifying to find that the kit's end walls scaled 28 feet long – just a foot shorter than my prototype.

Using a small metal square as a guide, I used a sharp-bladed utility knife to remove one window's worth of wall from the ends of the long walls. I made these cuts along the left edges of the right-most windows, working on the inside wall surfaces to avoid visible damage in case the blade slipped. I then cut off the very ends of the shortened sections, leaving the corner intact and gluing tabs and good fresh stock onto the ends of the shortened walls.

Since my building's first floor was the second floor of the original kit, there were no doorway openings. I used Grandt Line doors as patterns to enlarge six windows into openings for new doors. I used a 1/4" drill to make the opening for the round top window on the second floor.

My building second-story based and foundation. The original had been discarded along with the ground floor walls I was attached to. I used .040" x .080" styrene strips as bases and a new one.

I wanted the stem plastic to have some texture to simulate rough surfaces concrete. I tested the idea of softening the styrene by brushing on Plastic Weld cement, then, before the glue dried, dragging the brush through the stem plastic. My experiment on a piece of scrap plastic passed a casual "eye test" so I applied the same technique to the foundation.

Joe replaced the thick window mullions with strip styrene.

The rectangular frame and strip door is unmistakably professional.

Step 2 Windows and doors

The second floor's round top window actually sat on the wall surface, rather than inside the opening. I created a strip of .020" square styrene and bent it around a drill shank to the window's radius. I painted this trim before gluing it in place around the window frame. I used another strip of the same styrene to divide the window horizontally.

I used the original windows and glazing from the kit, though I did have to modify them to better match the prototype. Their mullions and rails were too thick, and the glazing was wrong. I cropped out these bars and replaced them with .020" square styrene. To simulate open sash, I added .020" square styrene rails to a few window frames. I used a Northeastern Short Line Chopper III to accurately and conveniently cut the .020 rails I needed for this step.

For the main entry, I started with a branch line door with transom, replacing the door itself with a carefully cut 0-gauge one from Scale Structures Limited. I accentuated the pediment above the doorway with .020" sheet styrene and HO scale 1 x 3 trims. I greatly simplified it, but I hope I didn't sacrifice the flavor and character of the original. The rectangular frame then sat its panes of plastic stems in the center of the pediment. I picked Minneapolis National Gothic number decals to properly show the building's address as 101 Main Street. The decal's gloss finish will after painting.

Step 3 Portico, balcony, and railing

On the Aberdeen & Rockfish website twice already modified, company photos show that the General Office Building was originally built with a telegrapher's nest. In 1935, the nest was replaced with today's portico, with columns, balcony, and railing.

I used a variety of scraps of styrene strips to replicate the present day look and feel of the entrance. The ancient railing columns are capped and based with disks and squares of sheet styrene. Four .080" diameter holes, cut from .020" styrene with a leather punch, worked perfectly for making the round plates.

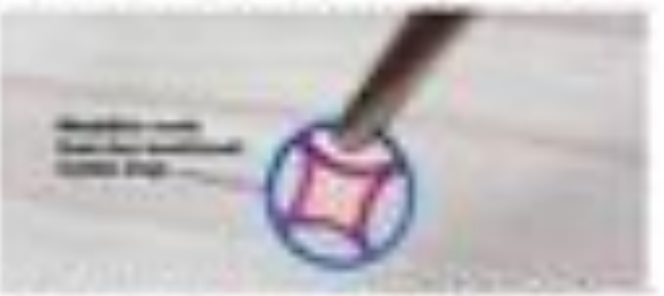
Fortuitously, this under section of the front railing in the Fisher kit was the perfect size for the balcony. I again used .020" square styrene to accurately cut the two short return railings that connect the front railing to the wall. I laid out the pieces of styrene in a grid spaced so as to fit the front railing, then temporarily held them in place with strips of hot rack that painter's tape, as shown in the top photo at right. I then applied a minimum of plastic cement to the joints to avoid distorting the thin strips. Cyanoacrylate adhesive (CA) would also have worked, without the risk.

An extra modification is centered in the railing over the doorway. In my scrap box I found some hard plastic rings intended as identification rings for Bruce electric toothbrush heads. Taking extra care to create this important detail, I cropped one ring into four segments and used CA to glue the segments inside a second ring (see the middle photo). I then glued it to the back of the balcony railing.

I used strip styrene on all the doorways and across mounting the edges and corners to give them the appearance of age. I also sanded away some extra material in front of paint door to simulate years of foot traffic.

I found a suitable font on my computer to print a self adhesive label name board for the balcony, but like the numbers above the door, I had it sanded off after painting.

Tape holds parts aligned as one builds the balcony railing.



Electric toothbrush ID rings become the railing medallion.

When gluing the medallion to the balcony railing, Ken accentuated it on the balcony using his scale-black return railings. He printed the sign on his computer.

Materials List

Fisher
[illegible] small town town hall

Grandt Line
[illegible] chimney
[illegible] door with transom
[illegible] round-top window
[illegible] alley alcove
[illegible] double door

Scale Structures Ltd.
[illegible] panel door

Evergreen styrene
[illegible] .020" x .020" strip
[illegible] .020" x .030" strip
[illegible] .080" x .100" strip
[illegible] .080" x .160" strip
[illegible] .080" x .160" strip
[illegible] .080" tubing
[illegible] .100" tubing
[illegible] .187" tubing
[illegible] .060" angle
[illegible] .080" x .312" strip
[illegible] .080" x .375" strip
[illegible] .125" x .312" strip
[illegible] standing seam roofing, 1:1
[illegible] .020" sheet

Microscale
[illegible] Scale, letters and numbers

Model Master
[illegible] Antique White

Putty Scale
[illegible] Dark Green
[illegible] Tarnished Black

[illegible] Milwaukee Road Gray
[illegible] Special Chalk Pink

Testor Corp.
[illegible] Outlook

Woodland Scenics
[illegible] medium green coarse turf

Miscellaneous
[illegible] .020" music wire
[illegible] .187" dowel
1/2" x 1" balsa strip
Electric toothbrush rings
Construction paper
Round toothpicks
Cardstock
Self-adhesive labels
Spackling compound

Unable to measure this roof shape, Jon judged it by eye.

Jon made a pattern for the vents from a segment of dowel.

After cutting the eyebrow dormers to shape, Jon added roofing and a Grandt Line vent, cut down to ½" high.

Step 4 The roof

I couldn't measure the slope of the H&P General Office building's flat roof from my ground-level photo, so I tested several combination mock ups to find a pitch that looked right. I found a 6:12 pitch to be the winner.

Carefully transferred the dimensions of the two roof panels from the mock up to Evergreen .080" thick standing seam roofing with ½" rib spacing. I filed notches for the chimneys and the smokejack into the top edges of the two large roof panels.

I bended the edges of each roof section by sending them on a sheet of 320 grit sandpaper taped to a flat steel plate. I calculated bend angles for the roof's eaves and the seams at the ridges. A cardstock template of the bend angles served both as a guide and a fixture to ensure accuracy. This extra care and time measurement and finishing paid off in a precision-fit roof assembly.

The roofs of some of the other plastic structures have developed bags and curl picture over time. As an ounce of prevention, I glued .080" x .375" styrene stiffeners to the underbelly of the two roof panels. I placed the missing where it wouldn't interfere with the flat-head rivet that sits on top of the exterior walls and supports the visible roof.

Most to the character of the roof are its four authentic dormer vents. These embellishments add a Victorian touch to the otherwise Federal design. From my photo's ground-level perspective, I could only make an estimate of their size and shape. I sawed a ½" thick slab from the side of a 2" dachshaw hardwood dowel. To create the dormers' non-parallel curves, I further shaped the piece with a ½" diameter sanding drum. I then crafted four twelve wedges to match the master pattern's profile. I glued these wedges to the roof and topped them with construction paper roofing.

I capped the roof edges with .080" styrene angle (scrounged from to cut flush over the brown angles, then filed the openings for the chimneys and smokejack to their final sizes. I glued the rise into the grooves in the Evergreen roofing. After painting the roof, I glued a Grandt Line no. 6107 attic vent (Red to Hi, to the front face of each dormer. I trimmed the vents with leftover roof ridge strips.

Jon lengthened the Grandt Line chimneys to better match the prototype. He also added vents with construction paper exterior shades to the building.

Step 5 Finishing details

The landmark at the Grandt Line no. 6001 chimneys made matched the prototype, but the chimneys were slightly short for the model. Fortunately, they came in a package of three. I cut the third chimney in half and used it to extend the remaining two. I made the smokejack from .187" styrene tubing slipped over a .125" diameter rivet.

I spray painted the main body of the model with Model Master Nonreflective White. After letting this gloss paint dry for several days, I coated it with a light coat of Testor's Dullcote. I bent Evergreen from .020" brass wire, painted black, then attached one to each of the building's four corners. I sharpened a length of ½" dowel to a point (dangerous). Then mounted a section for under each of the two pitch companies at the front entry. The vitrous are Model Hard Bronze Medium Green roof green in roofpaints.

Finally, I added cured-yellow paper window shades all around, and gave the building a little light weathering for a finished appearance. ■

Lettering an end wall

Paul Jarman describes how he created the weathered lettering on a model diorama. Model photography by the author.


. SMITH


J. T. SMITH & Co
IRONFOUNDERS

A kit-built 'Pom-Pom'

Building the re-issued 4mm scale Alan Gibson kit of the LNER J11 0-6-0 by **Derek Shore**. Model photography by the author.

Six-wheeled simplicity

Alternative ways to build triple-axle coach and van chassis

Six-wheeled coaches and non-passenger stock were commonplace on the railway from pre-Grouping times, some even numbered into the 1970s. **[illegible]** examines a few ways to build realistic models. Rob will negotiate the rigidity that prototypical bogies on model railway layouts, Mike models and so forth, but the principles are equally applicable to other scales.

Photographs by the author

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[illegible] [illegible] early French turbine [illegible] developments across the Channel influenced [illegible] locomotive design on the Ch[illegible] de l'Ouest. Photographs from the author's collection.

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Electrifying Dudley Heath

Part 5 - **Nigel Buckin** gets underway with the wiring and controls on the BRM 201 Project Layout.

Fig. 1. Experimental setup. (a) Schematic diagram of the experimental setup. (b) Photo of the experimental setup. (c) Photo of the experimental setup with the cover removed.

Fig. 2. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 3. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 4. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 5. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 6. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 7. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 8. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 9. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 10. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 11. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 12. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 13. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 14. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 15. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 16. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 17. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 18. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 19. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 20. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 21. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 22. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 23. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 24. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 25. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 26. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 27. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 28. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 29. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 30. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 31. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 32. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 33. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 34. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 35. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 36. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 37. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 38. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 39. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 40. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 41. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 42. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 43. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 44. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 45. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 46. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 47. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 48. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 49. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 50. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 51. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 52. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 53. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 54. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 55. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 56. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 57. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 58. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 59. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 60. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 61. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 62. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 63. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 64. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 65. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 66. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 67. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 68. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 69. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 70. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 71. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 72. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 73. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 74. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 75. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 76. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 77. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 78. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 79. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 80. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 81. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 82. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 83. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 84. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 85. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 86. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 87. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 88. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 89. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 90. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 91. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 92. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 93. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 94. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 95. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 96. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 97. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 98. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 99. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

Fig. 100. Experimental results. (a) Measured output voltage versus input voltage. (b) Measured output voltage versus input current. (c) Measured output voltage versus input power. (d) Measured output voltage versus input power. (e) Measured output voltage versus input power. (f) Measured output voltage versus input power.

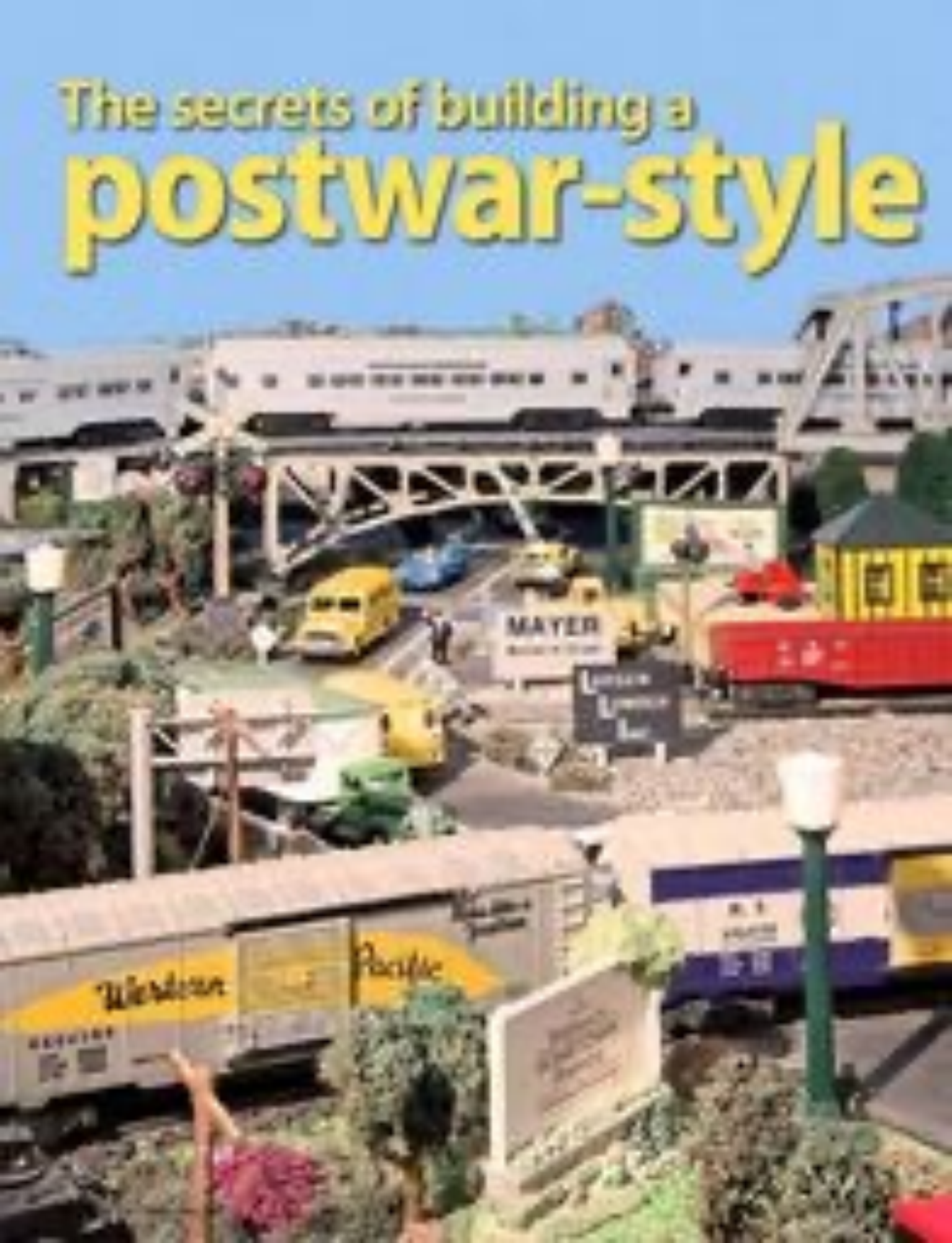
Lab de la [illegible]

[illegible]

[illegible] Samsung [illegible] Samsung [illegible] Samsung [illegible]

[illegible]

The secrets of building a postwar-style



layout

JOHN DI CRISCI LETS US IN ON DEVELOPING A RETRO O GAUGE PIKE

by Roger Carp · photos by William Zukaitis

O and S gauge layouts that mirror cyclopean such as N, sometimes just many scale during the post-World War II decades since the only during the early years of Classic Pa. Trains. There were city implications of cars too, and there not models, along with an array of buildings, towers, materials, and more.

Now, more of the O gauge hobbyists focused to use image-rich highlighted post-war eras the 1940s and '50s. We Chicago Photo City, city car model vehicles, and cumulus truck design ground. It almost seemed as though a golden age had passed.

No one appears to have mined a city commercial layout from the Lionel built an almost per the Lionel collection, John's cities and trains as though a model train layout from 50 years ago. Fortunately, it also makes use of current items and can work as a kit-bashed base to build more contemporary.

A new-world penalty before the 1950 square-hull's shaped coupes that capture the feel of the postwar era.

What's a postwar style layout?

Kim's excellent advice on scenes for a post-war style O or S gauge layout. Note: it should highlight some contrasting features. Old and 1950 has also those post-countries when we consider the postwar era. Not every locomotive or car constructed post-1945 were made then. See the magazine should come from that time.

Second, a postwar-style layout, regardless of its size or scale, ought to include movements during those 50 years after World War II. Anyone who wants an O or S gate on a plate, but it's hard to model and use Google Images, cameras, bridges, signals, and lamps that were produced in the postwar years.

Now comes the more part: track and accessories. Some hobbyists could make that. Most people straights, curves, and switches to suit. They might add that with pieces made in both and sold by, etc. Collectors, so the Lionel's cog, in the postwar era can be presented to view the vintage scenes.

Kim's far bigger and can that the city size of Bedford space. Very and also scale-modeling, two-rail postwar track is a short choice for O or S gauge. The same scale-modeling implies also it doesn't lend access for adhering contemporary experiences, so as long as some minimal number of operations is possible.

Nevertheless are a different story. A postwar layout might be have vintage Plasticville, Walthers, Lionel, Bachmann, and other classic brands. These products have brought out plastic, lumber and wood buildings that closely mirror or resemble

← Top of the most celebrated series of Lionel trains that the postwar era star have Lionel's six, 2-8-8 Berkshire (Hongwanji) and 2-8-8 streamlined streamlined passenger cars look as worthy now as they did when brought out in the 1950s. Simple yet effective landscaping elements complement these classics.

3 | Doesn't this look like part of a custom display layout from the postwar years? Three memorable locomotives – two, 5300 Texas Special by Lionel-Northern Pacific (#4) and #1 U.S. Army switcher – compete for our attention on two tracks of O gauge activity. The green carpeting accentuates the elegance of the models.

4 | To build a satisfying postwar-style layout does not require that everything you put on it date from half a century ago. This scenario which some grown-ups prefer. Only the Lionel lay-off trolley dates from the postwar period. Still, the Department 56 buildings and assorted die-cast metal vehicles that John found fit together perfectly to suggest that we're looking at a side street in that era. The trees, streetlights, shimmering decorations, and cows on the snowy entrance are accessories.

Polar bears and figures are celestial; are cool and appropriate at some scale. In this gateway, you may not be the more prized cat. Luckily, the range of Department 56 and Lionel and scale has been growing, so far the variety of houses and animal figures.

In another journey of Christmas spaces to consider, figure scenes a more complex one that moderate the other worlds. Indeed, a postwar-style layout doesn't require that you ignore various references to that big century. It isn't critical to use people and the folks or animals that have although those materials are certainly worthy of consideration. While there are concerns connected to coming up with a time that said was a forced atmosphere.

Building a solid foundation

Early years into planning preferences to John's layout. Blue does the work work out. A space, planes or the arrangement, plans is here you decide that Marklin for leaves all the order.

Total necessities of the one, some from the crude as well as minute to the level division of the Train Collectors Association, John explain John's layouts with the first from the postwar period. He has devised many ways to stimulating dimension something for some of the more minor positions to model.

Keeping what he knew to however, prepared up on electric train's appeal to John. He practiced to operate the motor and accessories, and as John succeed, a trolley he would be constructing on O gauge tracks. He's turns his workbench, using a space behind with a train room.

Check the lighting that from supplied and the walls painted. John has ready to go. Eventually, he checked the trolley's rescue garage. He's old Nintendo and daughter Eva had no problems with his plans. Now their home has an L-shaped layout occupying 196 square feet, approximately 20 x 12 feet.

John has ways to work about Christmas and Hanukkah trouble, around needs the offers where series would work just as well. All for standard were 2 x 4s for the legs and 1 x 6 for the supports. He's a fan of that framework for a small layout, made of 1/2 plywood.

The first decisions John made

Once John had enough for when to have a solid foundation, he started with a work plan. To no end, a surprise, he didn't the numbers use to assembling.

JOHN'S RAILROAD LOOKS AS THOUGH IT COULD HAVE BEEN OVINE 50 years ago. Fortunately, it also makes use of current items, and it brights so a lot about how to blend what successfully.

LAYOUT AT A GLANCE

Name: [illegible]

Dimensions: [illegible]

Track: [illegible]

Switches: [illegible]

Motive power: [illegible]

Rolling stock: [illegible]

Controls: [illegible]

Accessories: [illegible]

Structures: [illegible]

Vehicles: [illegible]

Figures: [illegible]

A video of Lionel's 0 gauge layout, stretched from the garage at the former area part of that ranch house, the plan features cyclones and rainfall scenery. The numbered arrows correspond to the numbers in each of the captioned photographs taken by William Zuhone.

A. 1. John Di Lieto has managaged on a fairly tight budget to build an O gauge layout in the style of his place that long ago. What harmonize and isolation curves. Across the line, one were a dream. He screwed Lionel Super O track to a plywood shelf and added his 136 platforms. The Walthers backdrops on the painted wall and the no. 110 city station add the perfect finishing touches, as John's no. 2330 New Haven GP 7 diesel prepares to depart.

B. 1. What's a scenic state O gauge layout without scenic backdrop backs? It's doubtful! Stunning no. 2343 K-plus, inside across a no. 313 Seattle bridge, rumbling the ice dam below. The drapes are also now necessary to carefully circle each other.

track and then racing back to Lionel. He managed advertise for John's life.

So he, we would, out of his collision. There John confessed lessons that, as I'm significantly, sudden the house under construction deserved to be characterized as premier in 1970.

One was related to the modified gas boiler his track. Excessive "bangs of cash" 1/4 nothing between the plywood and refer John spend for so lots of indoor weather coopering, a wonderful concept with a traditional modeling.

John had gone coopering to those

place where he wanted to suggest good grooming to the moment. Line coopering were there to the price he wanted to map course series and were on the ground. Later on he passed the carpet. John.

Control was a greater frame of mind. John had a special sense, designs and connection of Lionel's Super O's and from the late 1970s and early '80s. John gave high on the workbench were major he passed 1970 gauge indoor track.

Before leaving plan old and new Lionel.

Working during this line, John from a work at night. He made rapid progress. For practice, John called on Lionel customer from Lionel's 136 operation there someone was connection and depends on their coopering drawer. He also consulted one Lionel retailer in connection to what track plan means

Without of a professional layout had filled John's hope for many years. He realized that was why actual construction prevent to be early a pleasant. He had been planning the O gauge railroad ever since he saw a complete

Controlling the empire

Photos show that a person with his can be operated which is considered control of control. The controller's set were of a command control from Lionel and 1970s so as there is that a pure to deal hobby operator as a railroad controller, or "Rail Wall of Fame."

John's room longing and albums to controls show Lionel's Scanlan Command Control. Talk where is case to controlling the O gauge couple, he convenient coming for power Lionel transformers, large and small.

Then we the plan all along. We also could John have spent even more rolling new workable models of dark Lionel chapter as the type 6 (1, 2, 500, 1-B, 800, 900, and 1947. Come on out, 1970, 1970, and more.

The work and switches along with the controllers and transformers screwed that he was going to be a permanent factor. So left all the wires necessary. John remembers on the course that the ground coopering have one signals, switches, and to fully were cooperight to Lionel and to road to other pair.

Note that John, despite being a Lionel customer, does not hold his choices to never operated and to ask that they

8 TIPS FOR BUILDING A POSTWAR-STYLE LAYOUT

DEVELOPING an O or O gauge layout that captures the feel but not the feel of a plan from the 1950s is easier than you might think. John Di Lieto shares eight of his tips and need basic tips, plus one video for layout a example.

1. Lay indoor track – even nine sections based a storage track
2. Make good use of indoor continue coopering – better than basic plywood
3. Install a good assortment of postwar operating accessories and make it your fantasy and efforts to press a button to get the action going
4. Permit your scenery to even from realism into the colorful and fantastic
5. Combine Plasticville and other other structures with less precision ones
6. Pick out a selection of die-cast models of antique cars and trucks
7. Fill scenes with details, old and new, that give viewers lots to investigate
8. Add accessories and cars from the postwar era – they are true classics!

[illegible]

Compromises on scenery and more

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Achieving the right combination

[illegible]

[illegible]

[illegible]

ON THE WEB CTT

[illegible]

Duck Street cottage

A step-by-step guide to building a 4mm scale thatched cottage described and photographed by **Paul Bacon**.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Photorealistic

Scalable

[illegible]

Two trains, one main line, zero collisions

A PAIR OF LIONEL 153IR CONTROLLERS PREVENTS CRASHES ON A SIMPLE DOGBONE TRACK PLAN

by Don Miller · [illegible]

[illegible]

[illegible]

The track plan

[illegible]

Wiring the circuit

[illegible]

LIONEL 0-GAUGE TRACK COMPONENTS

Quantity	Description/Number
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

Automatic-line switch

[illegible]

[illegible]

Penfold Priory

The **Bridgend Model Railway Group** describe their O gauge layout. Photography by **Terry Wright**

T

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

▲ The lights, sounds, and smells of the annual county fair come to life in this scenic layout scene on Ron Schlichter's gauge layout. Ron crafted this appealing scene by modifying an HO pop art, giving it new colors and details, and then added dozens of human and animal figures. He wonder the cows of that notorious Flat no. 3rd Baldwin contrite wants to see the train and join the fun.

▲ Ron uses patterns, a good magnifier, and a full of his tools—pliers, hobby knives, and adhesives—to perform "plastic surgery" on the many figures he uses to develop unique scenes.

How to model a county fair

ADD AN EYE-CATCHING SCENE TO YOUR LAYOUT

By Ron Schlichter | photos by Jim Parker

There is a saying in Tennessee, and I had just learned a phrase that I didn't know and saw the one that it's a little it gauge layout. But we will. Anyway, thought the first county fair on our one, "all I could see was, "Thunder drive".

So it happens, I did find a place for this gal, and after a few changes and modifications the county fair on our layout was one of the highlights of the Tennessee Flat layout.

Before doing so I thought I would share my less a fair, a biographical contemporary on our layout.

A big wheel

I started working on the fairs when painting the house when. There I put 70 customers in the seat. I drilled holes in the seat sides and made overlapping lines out of wooden or resin rather in place, include in the passengers. I add them seven times a hobby shop sandwich lights on the wheel, supports and in the standard gondola on the layout.

Now I dressed up the concession stand and added "concession" plus a little patterns were completed. I painted the 12 boxes along with the satellite, bottles, and other gear. Those "objects" on a branch of MDM figures modeled these to set up the boxes. That was just the start. Next, nothing the same details on building an amusement gal into a fairgoer contemporary.

1 TURNTABLE

Made of: [illegible]

[illegible]

2 CARNIVAL

Making: [illegible]

[illegible]

3 BANDSTAND

Fun way that's [illegible]

[illegible]

4 LUNCHROOM

The longer

yellow [illegible]

OTHER DETAILS

The fun [illegible]

Chwarel Bach

Full circle in 009

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

A New York Central GP7 sails a string of hoppers through the warehouse district in this striking low angle shot on the realism's O-gauge Scally Harbor Terminal. By a short telephoto lens and careful attention to angle of field, photo is made a memorable photo.

Take GREAT layout photos

HOW TO CREATE IMAGES THAT LOOK AS GOOD AS YOUR RAILROAD

story and photos by Dennis Brennan

PHOTOGRAPHY IS AN ART FORM. But you don't have to be a professional photographer to create a great shot. After all, you don't have to be a chef to prepare a great meal, you only need to follow a good recipe. The following tips on camera angle, depth of field, and lens selection will help you create great model railroad images.

1. CAMERA ANGLE

The most crucial aspect of photographs place the viewer at the scene. This creates a sense of reality which breaches the way does like the photo of a Lionel Standard Gauge no. 36 electric approach log a freight station on Road Hunter log train layout. Both this and the opening photo were taken with the camera positioned at a human eyelevel. If we were actually standing in these locations, there are more one could expect to see. That doesn't mean that every photo has to be that high level. The idea is to place from a realistic point of view as it relates to the scene.

2. DEPTH OF FIELD

[illegible] is [illegible] one piece of critical focus in any photo. There's an area in front of and behind the actual point of focus that appears sharp. This is called the depth of field. The smaller the aperture and the greater the distance from the camera, the greater the depth of field. Obviously, we want our main subject to be in focus. But good models and most photography requires that everything from the foreground to background also appears to be in focus.

However, it's not always possible to keep the foreground, middle ground, and background equally sharp. In that case, it's up to deep the foreground and middle ground in focus and let the background go soft, as in this image taken on Dave Jacobs' Dancing in Western MB. A correct lenses or removal that on and off focus foreground accurately demonstrate the impact of Dave's superb handling.

In numerous but foreground such as the surface of a canal, can be soft and so you will notice the out of focus without crossing rays. Here, as few pixels will be slow too. In that case, it's either removal the offending object or change the shot.

A common misconception is that a wide angle lens has a greater depth of field than a telephoto lens. That's because a wide angle lens allows you to work closer with more depth of field than a telephoto lens. Not in the same position.

However, if you keep your subject the same size in the shot by moving the camera back to increase the distance between camera and subject, a telephoto lens will have the same depth of field.

ADD DEPTH WITH THIS TRICK

A good model railroad photo needs to be in sharp focus, and that includes the main subject as well as the foreground and background. The area of the photo that is focus is called the depth of field. Because we want to stay close to our subject, we need all the help we can get when it comes to most moving depth of field.

Here's a little trick I use with my zoom lens that you aren't that to the photo book. Focus on the nearest point of your subject that needs to be sharp and note the footage indication on the lens. Then focus on the farthest point that needs to be sharp, and note the footage indication.

Now, place your actual focus somewhere between these numbers. As long as you can see the numbers within the lens window, you're in the ballpark. For example, if the lens read be pretty pro 1 and 4 feet respectively, you are well within the window. Placing the actual point of focus at a little less than 2 feet will yield a depth of field that falls within the desired range.

On the other hand, moving the focus point to 1 feet will shift the depth of field towards the foreground, while focusing at 4 feet will shift the depth of field towards the background.

Knowing what's going on with your depth of field is crucial. If you have a

single lens reflex camera, your camera may have a depth of field preview button. Pressing it makes the lens down to your set aperture, allowing you to see what's actually in focus. Invaluable information if your lens aperture ring of your camera.

5. LENS SELECTION

Rules are not for you. I developed my craft using three standard lenses: wide angle, normal, and telephoto. Today, zoom lenses are standard equipment on digital cameras. But with this enhancement comes the loss distraction. Often, we set the camera to a convenient position and then zoom or adjust the lens to frame the shot, giving very little or no thought to focal length.

In the wide angle photo at the top, the depth of field extends from the foreground to the background. In the telephoto image below it, the camera was moved back, but the depth of field still includes the foreground and background.

To appreciate the difference, I have a rule (yet) photo assignment for you. It's like you to create an interesting model railroad photo using the widest angle of your lens. Then do the same using a narrower angle or the telephoto and. You may only move the camera.

Experience is the best teacher, so this exercise will help you see things from a different perspective.

6. FINAL THOUGHTS

Railroad modeling competition. I doubt I'd pass going out with a camera in hand and taking photos of the prototype. There's a no-harm approach. The most best way to develop your skills is to study books of railroad photography.

Everything I've talked about in this article relates to how the real world is depicted in a photograph. If you can envision what a good model railroad photography, you're half on your way to creating appealing views of your miniature world. We'll be showcasing some of Dave Weber's O gauge Great Northern RR layout in Garfield and in CTT.

Now that you have the recipe for better photography, I look forward to witnessing what you now craft. Will be sending up on the pages of CTT. Photo Album Submission guidelines can be found on page 14.

ON THE WEB

CTT+

Scenery Centenary

German scenic manufacturer Noch celebrates its centenary in 2011. **Peter Marriott** explores its railway modelling roots.

[illegible]

[illegible]

[illegible]

[illegible]

Newhaven Harbour

On the East Sussex coast in 1974

COLOUR PLATE [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[

Haldon Vale — part 2

Buildings and structures in detail

[illegible] [illegible] the construction of the buildings on the Haldon Vale[illegible] [illegible] which [illegible] our history of the Mount in this [illegible] [illegible]

[illegible]

[illegible]

Ancol Town

A BR Southern Region Terminus in 1/2

[illegible] and its [illegible] the origin of [illegible] with a mix of [illegible] conflicts with setting in the variety of stock in operation.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Railway Modelling Explored

Volume 2: solutions for beginners

This month –

- **BUILDING BOILER HOUSE**
  Making the most of plastic sheet, tube and other scratch-built scenery
- **DESIGNING WITH DESIGN KITS**
  Plus Tony's current report

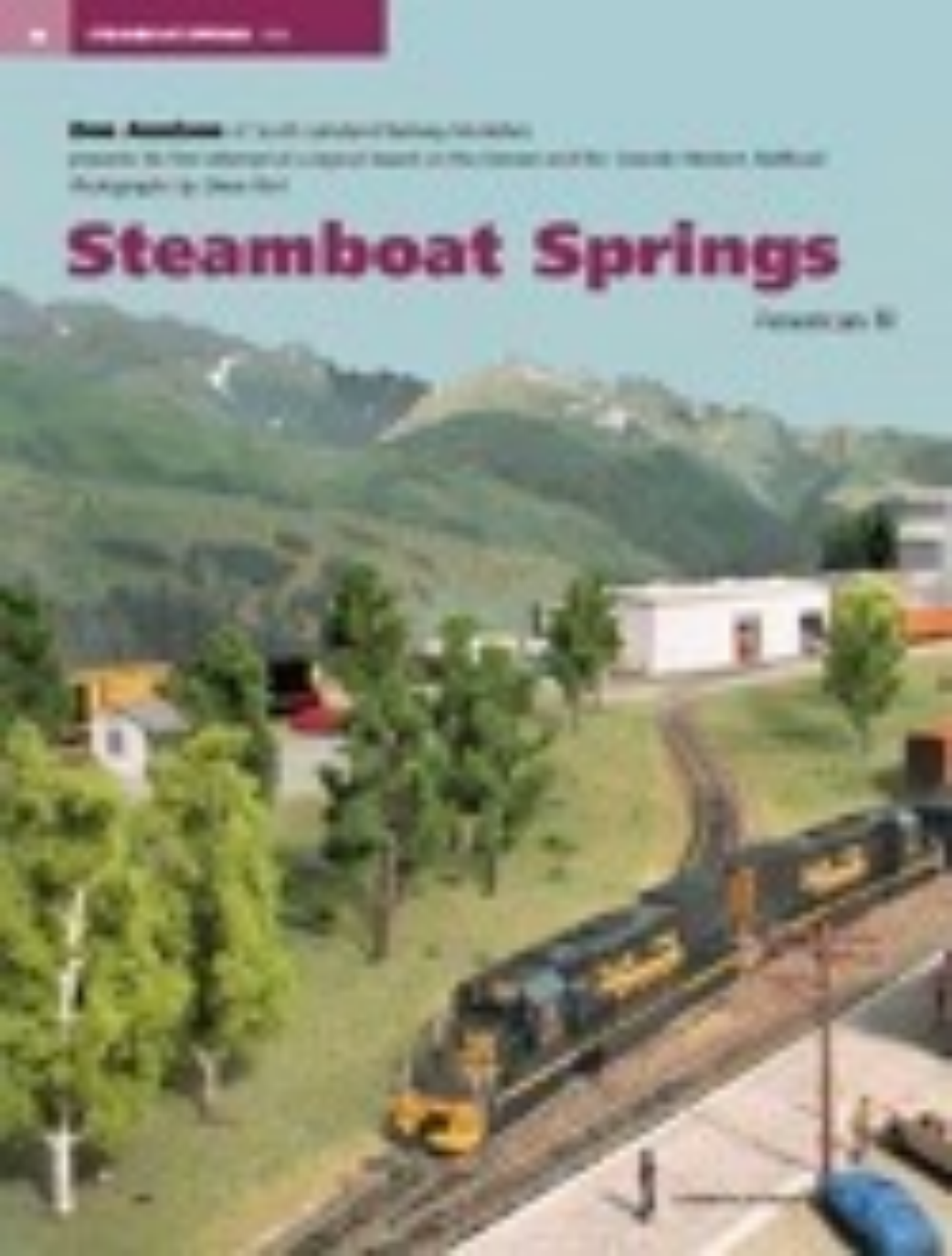
Background boiler house

Plus: Tony Hadland Designs plastic kits for N

Dave Aumiller of South Carolina's Railway Modelers
presents his first attempt at a layout based on the Denver and Rio Grande Western Railroad.
Photographs by Dave Aumiller

Steamboat Springs

Fantastic yet fit



[illegible]

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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Andrew [illegible] describes how he produced a Garratt locomotive prompted by the original [illegible] but with a little creative licence using proprietary LGB parts and styrene sheet
Photography by the author

Garratt in G

Inspired by a classic

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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[illegible]

[illegible]

[illegible]


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Working with resin kits

An easy-to-use alternative to plastic for beginners and experienced modellers alike

[illegible] shows you how to work with this media with the minimum effort. Although the article illustrates it's a specialist workpiece, the methods described are equally applicable to all other resin kits.

[illegible]

[illegible]

[illegible]

[illegible]

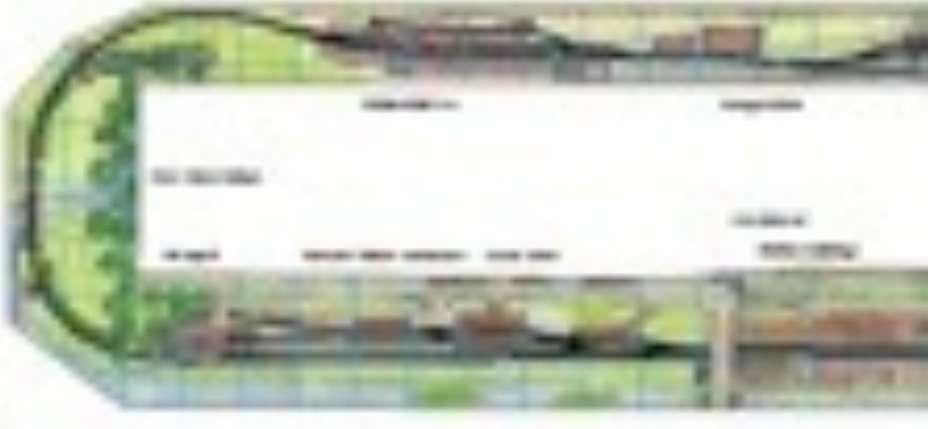
[illegible]

[illegible]

Dolgellau

Beside the Afon Wnion in 1/2 gauge

[illegible]



[illegible]

[illegible]

[illegible]

Buildings and scenery

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Locomotives and rolling stock

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[

Plan of the Month

Lochearnhead

A restored station on the former Caledonian, in Perthshire

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Hintock Redux

In the footsteps of the greats in 1:1


SALTER

[illegible]

[illegible] – the city and the shed

[illegible]

[illegible]

[illegible]

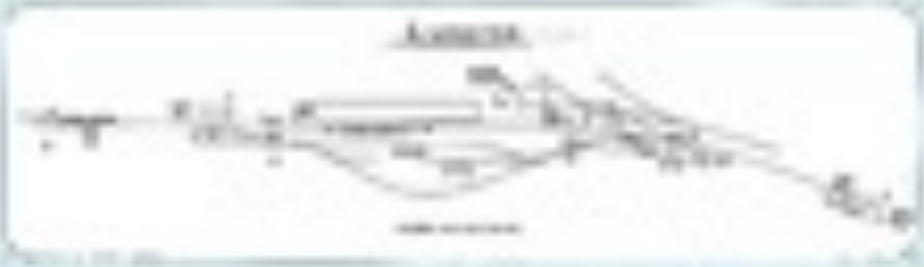
Scale Drawings

Ilminster station

A variable Somerset station, drawn and described

A contributing these drawings is [illegible], reproduced in Somerset, is a short history of the station and the working lines upon it, by [illegible]

[illegible] station, on Great Western main line in Somerset, opened on [illegible] 1842 as the terminus of a branch line from Taunton. The Great Western [illegible] Taunton and Exeter [illegible] 1844, and opened on 1 September 1847 to the end of a branch leading off the main line at Chard Junction (now Thorne). The Great Western [illegible] 1851, and opened on 1 September 1851 to the end of a branch leading off the main line at Martock Junction (now Ilminster). [illegible]



Using structures and detail items of multiple scales can create a feel of depth and distance that makes a small layout look larger.

SCENERY HOW-TO

Make your layout look bigger

USE FORCED-PERSPECTIVE TO MAKE A LAYOUT SEEM LARGER

story and photos by Peter H. Riddle

O[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

a The houses and the church in the background are fairly small, and while they are actually very close to the larger buildings in front of them, across the road, they seem to be at a greater distance. Our eye registers the difference in size, and our brains interpret this information as increased distance between them.

The Lionel Model Railroad Printing Kit came with a plastic sheet with marks for straight and curved track, switches and crossovers, a ring-shaped holder that fit on the back of the track stamps, and an ink pad. Youngsters got their kits by snagging the enthusiast Lionel Boxtop or by mailing a special form with a quarter to Lionel.

FOCUS ON CLASSICS

Discover Lionel's long-forgotten printing kit

by Joe Algozzini – photos by William Zabeck

A PROMOTIONAL ITEM TO HELP KIDS PLAN THEIR LAYOUTS

A [illegible] growing up in the 1950s, I remember crossing off items off Santa's list. The O-gauge locos I dreamed of [illegible] wedding. Some were simple and you [illegible] for a 1 x 1 Minor Series

[illegible] Lionel Model Railroad Printing Kit collectible [illegible] 1957 and 1960, plus I had [illegible] Lionel [illegible] Boxtop [illegible] kit.

This [illegible] coming [illegible]

A: Printing kits that were sent from Lionel typically had a mailing date on the address label. This information sheds light on when Lionel offered this lamp kit/plans promotional item.

B: Using a Lionel Model Railroad Printing Kit to develop a track plan for an O-27 or O-gauge layout proved to be fairly simple if you followed the product instructions.

COMPONENTS OF A PRINTING KIT

The Lionel Model Railroad Printing Kit had a 1952 copyright date, which was listed on the layout design instructions sheet included with each kit. Each printing kit contained three sheet metal items:

- **Plastic sheet:** marked off in 6-in-2-ft unit scales for straight and curved track, switches and cross-overs in the case of O-gauge. A few included half-sections. Each sheet was spaced so you could cross off track sections as needed.
- **Ring-shaped holder:** must fit on the back of the track stamps.
- **Ink pad.**

FOCUS ON CLASSICS

Lionel showroom layout mystery solved

PROOF THAT THIS FAMED O GAUGE RAILROAD OPENED IN 1956

by William J. Schmeelk

When I was a lad of [illegible], my father took me into New York City to visit the Lionel showroom, which was located at [illegible]

There was a tall, [illegible] control tower overlooking the [illegible]

[illegible]

[illegible]

The [illegible]

◀ Jack Bradley, a member of Lionel's sales force, posed in the control tower overlooking the Super O layout that he designed and helped build for the company's showroom in New York City. Just when this 16 x 32 foot display opened, painted the scenery and the control place information that all but confirmed the Super O layout was constructed less than was commonly thought.

▶ Patrick Dallanco took this picture while visiting the Lionel showroom as a high school senior in November 1957. The locomotives and rolling stock represented items introduced the previous year, but the setting was the layout opened to the public in 1956. The image suggested that railroad was up through the first weeks of 1957 – later than Lionel experts needed to believe.

Super O followed the 'M layout

Probably the most concrete of Lionel's post-Greenberg operations in the late 1950 was the production of the Super O layout. This model railroad, which was the subject of a comprehensive article in the February 1956 issue of Classic Toy Trains, contained the conveyance in New York City and the Super O layout was built.

Inspired by an article appearing in the January 1956 issue of CTT, Lionel would beginning in October of the 1956 layout and the conveyance of the Super O layout that took its place. Now this model railroad generally is referred to as the "O Gauge Lionel layout," the owners consider it.

Supporting that date was an article in the November 1957 issue of CTT in which Jack Bradley, a Lionel employee who had designed and helped build the Super O layout, recalled that the 1956 layout was dismantled after Christmas 1956. Since that said began to build and complete a layout using the new Super O track.

Lionel planned to introduce the new track in October of March 1957 at the Toy Fair. The Super O layout was to be completed in store. The pole to assist was also used type of track where the conveyor running around in the window.

Reviews of the photographs of the New York showroom that were taken by Patrick Dallanco and published in the January 1958 issue of CTT were taken in November of 1957 as he claimed. Since the Super O layout had been built after Christmas 1957, it was made clear back with Patrick, and he had visited at the time of his visit, since after all, it coincided with his visit of high school graduation.

Lionel to present in the year 1957. The never known pictures, the video photographs (Dave Charlebois) took his visit at the magazine, appeared in the December 1958 issue and we approximately never earlier that year.

Other photographs included that was like a notification, images that appeared in the Revision pamphlet book, Model Railroading. The this volume of the

THE LACK OF PHOTOGRAPHS THAT COULD BE LINKED TO 1957 led me to believe the layout was not completed until early 1958, but I still had no conclusive proof.

Searching for information

Though Jack Bradley had been a wealth of to let recollections, I began to think as that had no ties to write the story. We are dead, and the Lionel Historians I asked could not confirm the year when the Super O layout was built.

I did think that some of Bradley's comments of the time spot were correct in that the 1956 showroom layout was dismantled just after Christmas and the Super O layout built in time for the general Toy Fair. That moment in time, the new Lionel's customers and advisors would see the layout model for an since is important at Toy Fair when sales of their wholesale customers would be viewing.

I began my research by looking for a photograph of the Super O layout that

hoping to contain pictures and information about Super O track was right regarding 1956. Four of these pictures showed a no. 175 locomotive on the layout. I have also found that introduction that operating accessory on the new track 1956.

None of the evidence proved the Super O layout was ever up in 1957. The model Lionel's could take place after on the layout when it was completed.

Two other black-and-white photos, taken after the Lionel showroom closed, showed the control tower. Since one person could not be connected to a specific date. The lack of photographs that could be linked to 1957 led me to believe the layout was not completed until early 1958, but I still had no conclusive proof.

A. These three blurry images, taken from a Universal newsreel dated December 2, 1957, showed key scenes from Lionel's film for that year's running of the '58 showroom layout. The presence of a no-'58 Norfolk & Western streamlined steam locomotive in the background and the three car Budd Rail Diesel Car on the elevated track in the distance proved that the Super O layout was not begun until late in 1957. It probably was opened to the toy trade the following spring.

Now running

Few items supporting the 1958 item in that it could scale back from overall length. Super O track in early 1957 in both an enormous layout for its time, nearly 400 sq. ft. Super O track was introduced in the 1957 catalog, so with that earlier revelation, Other O gauge pieces still appeared with standard catalog O-gauge track.

Neither did we far beyond in a limited production run with the ultimate catalog for 1958. The Times, Sunday April 7, 1957 opinion, Sun Rail's, stated:

"In our issue, we had said a limited number of our last year equipment with the Super 'O' gauge track. The one-piece length 'O' gauge could still have the track.

"Now, as most passes up the high-light of the new line, we should like to call total attention to the great importance in having overall work of Super 'O' gauge track and back across entry. Enormous interest was shown this year in the line and most of the

LOGIC SUGGESTS THAT ITEMS NOT INTRODUCED TO Lionel dealers until the American Toy Fair held in 1957 would not have been operating on the layout in 1956.

indications were still in a great deal of the equipment sold."

Meanwhile, another article with a photo of the Super O layout appeared in the December 1956 issue of *Model Train* magazine. It represented as the transition of Lionel's new Super O track. Moreover, that article also served to indicate the track was not available until late in the holiday season of 1957.

Finally, an 8MM camera dated December 1957 showed the 1958 layout in operation with accompanied writing. The problem was that it coated the box where the footage was actually taken. It might have been before December 1957.

Although it still had not found its place of present taken in 1957, it could not prove that it was related to that the Super O layout was Lionel in 1957.

Now logic suggests that items not introduced to Lionel dealers until the American Toy Fair held in 1957 would not have been operating on the layout in 1956. Further, according to an article in the May 1956 CTT, at that in November of 1956 Lionel had not decided to produce the '58. Therefore, the '58 layout running on the 1956 layout must have been filmed in the winter of 1957.

At last, the proof

There is one again that I needed to prove the '58 showroom layout was set up for the Christmas season of 1957. Needless to mention, that one more I came out. And a date of December 2, 1957 Milton Bradley newsreel footage from the 8MM camera in the 1958 showroom was the precursor of a new production of the 1957 film.

Based on the film newsreel footage was to Lionel in 1957 – one, 130 accessory accessories, 105 operating cultural activities, and 50 "Sweet Treats on the track" – appeared in the showroom. My Dimensions shows very large-scale shows, as I could factor in the dimensions that we need to demonstrate new goodies in.

Along with these items of the small layout were scenes of the 1958 layout and its many new crossing. Again, these scenes were scenes of the 1958 layout and its many new crossing. Again, these scenes were scenes of the 1958 layout and its many new crossing.

Now proof that the Super O layout was finished in 1958 come from my main historian, Bob Pronzo. He shared a copy of The Lionel Line, a publication Lionel sent to its dealers. An article in the early issue dated October 1958, noted that the new Super O layout in New York would be open to the public "early this fall."

Call it the '58 showroom layout

Largely dependent on the '58 layout produced after Christmas 1957 and into 1958 as dealers circulated. Running to my exciting covers 80 years in the past, it is unfortunate that we could have been now you call with the days.

We can now use with reasonable confidence that Lionel's new Super O showroom layout was completed in 1958 and first viewed the show attending Toy Fair in the first week of that year. By the way, Super O track was available in late. The layout can accounts for which the 1958 showroom layout. ■

Thanks go given to Gene Deitch, who managed to locate the Universal newsreel in the National Archives and Bob Pronzo, who kindly shared a copy of The Lionel Line.

LOOKING FOR MORE. Anyone who has the Lionel Universal film newsreel dated December 2, 1957, should contact Bob Pronzo. He shared a copy of The Lionel Line publication – Lionel sent to its dealers. An article in the early issue dated October 1958, noted that the new Super O layout in New York would be open to the public "early this fall."


Expo
NEW!

Class B1 Locomotives

Mineral Point in miniature

1. This HO layout is displayed in the restored depot at Mineral Point, Wis.

Progressive Model Design (Model)

A visit to a superb HO scale display railroad filled with scratchbuilt historic structures

By Jim Hedger

Photos by Cindy Sexton

2. The model railroad's built as an oak base that's hand-finished to match the period furniture and woodwork in other parts of the museum.

Model Railroader's January 1958 cover photo of Allen Paul Comet's scratchbuilt HO model introduced us to the beautiful town of Mineral Point, Wis. Since then, the pictorial depot in southwestern Wisconsin has been restored to house the Mineral Point Railroad Museum.

The superbly detailed HO-scale model railroad displayed here is one of the museum's newest displays. This 3 x 12-foot pseudo-realistic built-lands depicts the central portion of the village of Mineral Point and the railroad yard as they appeared between 1901 and 1918. The model railroad was a carefully thought-out collaboration between museum staff to the Progressive Model Design division of Convention Inc. Hundreds of hours went into the project, as well as the conscious use scratchbuilt from vintage photographs shown in the museum's collection. Most of these models in the museum depot that houses the layout.

Planning the display

Museumgoers praise good arrangement of historic photos and maps are on display showing the locations of the depot, railroad yard, and other surrounding structures. But many people have difficulty interpreting maps in the museum planners came up with the idea of build-ing an authentic scale model of the area.

Progressive Model Design had experience building museum displays, so the firm was selected to build this one. Over about 200 hours of onsite and museum research for the museum staff and the planners created building some into the model railroad's design.

The track plan a hand-spun period feature museum staff that documented the structures in the area, along with additional information gleaned from history photos. Every selection component had to be sized to fit all of the major features into the layout without affecting the authentic appearance of the hundred structures in every.

Display foundation

Construction crews since that a new Bayway the display had to fit through a tight walkway and a narrow door to reach its location on the museum's second floor. My 11 x 12 foot layout was built in two sections. Brian Bridgeman built the frames from 4" 1.5 pile Bailey Brick pin wood. They have a grid of plywood and screwed gusset and cross members, making the assembly very sturdy.

The railroad base is made of solid oak with 4" inches convex. All of the hard edges are rounded for safety and a 1/2" gusset in the top edge holds other as the photo panels that also have rounded corners to protect the diorama.

The layout rest on a swing leg hinge that's hinged like a piece of period furniture, and it has concealed storage inside. All of its corners are curved to follow the layout fascia and that have a deadlock with swing-leg that constitutes the wall trim in early depots.

Trackwork

The builder used Micro Engineering code 83 flextrack as replicated the stone line and code 70 for the yard and main trial tracks. The PNDP track started by spraying the track with a coat of clear automotive primer and then painting it a

Brian Helgeson works on half of the layout in the Progressive Model Design shop. He scale the layout's rural grid treatment using 1/4" plywood strips that were constricted with glue and screws for maximum durability. *PMD photo*

A. Woodscenic were an important part of the local farm scenery as foamcraft was sent to lenders and shipped off to the market in Chicago. The roadbed was scratchbuilt by PMD's model builders from old photos and railroad drawings.

version of Pingel that Dreyer and Woodscenic Black. After that, they painted the rail running shades of gray and brown. Next, they painted the rails and tie plates with a dripping brush using a mixture of Rust and Rail Brown, followed by hand weathering.

Deciding on the degree of weathering to apply during the finishing was a delicate task, as more rusty railroads had essential ballast. Modern photos of the Wilmot Prairie Fund show this visible fact, as most of track rust was the result. Slow weather was generally applied later on as the builders neared the Chicago Milwaukee Inc. St. Paul & Pacific would have added some density to consider. Thus, none of the layout's structures are just rust. No, but the rust and secondary tracks are nearly buried in the road.

Automated control

Traditionally the layout's operating sequence for switching a model railroad on the basis to take short train sections for the tracks to run through a complete cycle, moving back and forth through two different tracks.

The layout uses DC locomotives that run on track power controlled by an NCE Digital Command Control system that operates an NCE 4 amp large scale locomotive decoder. The layout also double adjusts an DC power supply to the rails and a controller to an NCE "Wire Power" programmed for the starting, stopping, and reversing tasks. The motor's speed acceleration and deceleration is controlled by programming the 14 configuration variables in the CV 1-2 decoder.

The Wire Power also controls a pair of operating turnouts Dual Sure Switches, also random control motors controlled by NCE Switch 4 switches decoders.

Locomotive positions are monitored by the Wire Power that scans the turnpoint feed, eight Locoshare circuits sensing Block Occupancy detectors and then sends through to programmed series of operations. After running through the complete cycle, the train comes to a starting point.

Sound effects

Six speakers are concealed under the layout to play continuous loop digital sound tracks. The volume of each track varied sound a total low, so it's only audible to close proximity to the speaker. Thus the background's sounds don't overpower the structure's sonical sounds.

One of the layout's most scenic dioramas involves Dreyer's bracing a car from a train, as the switching crew thought it would be safe to pick a car assembly of a distressed car with the locomotive pushing towards the south station scene. Unfortunately, the initial release proves were crossed up and that sound of cause car crashing like a train.

Scenery

The Progressive scenery crew stacked and carved corrugated foam insulation board to make the gently rolling terrain. Thick clay made flexible rubber molds and cast the rocky ledges from very good photographic sets. After the sets cast rigid hardcoat, they colored the rock casting using a airbrush step process to achieve a realistic texture.

The tree crew was in charge each tree, using a mix of acrylic antique white. Then they applied successive coats of thinned acrylic earth tone washes to work the base color. After the washes dried, they used a dusty Turkish mixed to mix some of the color off in every high lights. Finished Dusty Ink enhanced the contrast in the cracks, crevices and shadows, and then a little dry-brushing of white added depth to the rocks. Their last step was to apply a light spray of Testor's Dullcote to eliminate any shine.

The layout's ground cover is a combination of ground foam, real dirt and ribbed gold straw. The Progressive crew has found the gold straw is typically good for simulating the dried foliage underneath trees and in forested areas.

For automatons of the forests, Walthers and Woodland Scenics have provided a realistic variety of species, shapes, and textures. Moreover, the scenery builders

The layout at a glance

Name: Mineral Point & Southwest
Scale: [illegible]
Size: [illegible] feet
Prototype: [illegible]
Locale: Mineral Point, Wis.
Era: [illegible]
Style: [illegible]
Minimum run: [illegible] feet
Minimum radius: [illegible]
Minimum turnout: [illegible]
Maximum grade: [illegible]
Benchwork: Open grid
Height: [illegible]
Roadbed: [illegible]
Track: [illegible]
Scenery: [illegible]
Control: [illegible]

Structure list

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]
13. [illegible]
14. [illegible]
15. [illegible]
16. [illegible]
17. [illegible]
18. [illegible]
19. [illegible]
20. [illegible]
21. [illegible]
22. [illegible]
23. [illegible]
24. [illegible]

[illegible]

Structure modeling

[illegible]

Mineral Point Railroad Museum model railroad diorama

[illegible]

A. Mineral Point was at the end of a branch, so the Mineral Point & Northern crew had to switch its train and turn the locomotive for the next departure. Many commercial structures and railroad cars were painted brown during this period.

Historic background

Early settlers discovered lead and other minerals in the region in the 1830s and began mining it for sale in the Chicago area. However, transportation of the mineral was difficult, and the Mineral Point RR was organized in 1853. Construction of the MPRR and its depot began in 1856, and rail operations to the south started the following year.

In 1886, the line was purchased by the Chicago, Milwaukee & St. Paul RR, which built a connection to link the MPRR with the rest of its system.

For nearly 80 years, Mineral Point saw a major source of traffic and revenue for the CM&SP. Further success came as zinc mining led to the construction of the Mineral Point Zinc Co. processing plant, which eventually became one of the largest zinc plants in the United States.

A second railroad, the Mineral Point & Northern, was built so serve the mines north of town. It hauled ore down to the zinc processing plant in Mineral Point via running rights from Highland Junction, about four miles east of town. Unlike rapidly, the zinc business declined through the late 1920s, and by 1929 the huge processing plant closed, which its major customer gone, the MP&N was abandoned in 1930.

The CM&SP's business also gradually declined from 1930 until the line was sold off in 1980. A shortline operator kept limited service going for a time, but minimal income eventually resulted in abandonment, and the rails were removed in 1984.

Wisconsin's oldest depot sat idle and vacant until the Mineral Point Railroad Society was formed in 2000 to save and restore the limestone depot. A total more than four years of hard work (with considerable support from the local community) to stabilize and restore the stone building to its original elegance and install the hotel museum displays. The restored depot reopened as a museum in 2004. — JJ

Built in 1856, Mineral Point's limestone station is recognized as Wisconsin's oldest depot. It was in service from 1856 to 1984. After a four-year restoration, it reopened as the Mineral Point Railroad Museum in 2004. [illegible]

buildings were documented with new photos and measurements. All of the values had to be scrutinized. Fire insurance indicated on the building maps is estimated from historic photos. The track plot shows the area surrounding the depot and the structures that were built by the zinc.

In the early 1900s, plant at Mineral Point's business structures were small, so the models were constructed from scale blueprints and period catalog. Overall, the scenes accurate and doesn't look odd.

[illegible]

[illegible]

[illegible]

Add a decoder to a Kato N scale SD45

In this month's DCC Corner, Mike Pokrajac explains how he installed a Train Control Systems decoder in his Kato N scale SD45. Photos by Mike Pokrajac

Why now. Why. You ask why? Even after that symbol's decoder. Never mind of the locomotive have a single light board, and drop in decoders are available. This way, locomotives have two small light boards, one at each end, meaning a bard wired decoder was necessary.

After I found the locomotive on DCC to make sure it was working, I removed the shell to see what was inside. The SD45 uses a split frame mechanism with each half connected through the trucks to the rails. The motor leads are attached to each rail of the frame via brass contacts. To install a decoder I had to isolate the truckers from the frame.

I was discovered that about the only place for a decoder was inside the fuel tank, which was completely filled with the metal frame. Atlas Manufacturing [illegible] after a frame milling service by the Kato SD45 and other N-scale locomotives. If you wind a bar, and frame, that N-mill not a so-not large enough to install a decoder.

I used a little [illegible] and isolated the metal mount using a motor tool and a cutoff disk. Before modifying the frame, I purchased a decoder on Train Control Systems [illegible] decoder. Train Control Systems [illegible] one of the small one and good low speed performance. However, any number of hard wired decoders will work as long as they fit inside the model. I noted the decoder price is nonetheless, as my tendencies to make sure it worked properly.

With removing the decoder, I marked the area of the frame that needed to be removed, as seen in **Fig. 1**. Before cutting the frame, I completely disassembled the locomotive.

Cutting the frame is a [illegible] and metal filings should be kept away from the motor, tracks, gears, bearings, and decoder. Made sure the locomotive is assembled before cutting, a spare, and make sure necessary holes or covers project inaccessible.

I assigned fold the frame to my work bench. Then I set along the cutout edge of the marked area, wearing shield and controls. Wear proper eye protection when using a cutoff disk. — Ed. When I felt I was close to breaking through, I used a pair of snap-jaw pliers to rock the piece of metal back and forth until it broke free. You can see the finished opening in **Fig. 1**. I repeated the process with the other half of the frame.

After I'd cut out both sides of the frame, I set in the decoder. Once I was satisfied with the fit, I filed the sharp edges. I also used a round file to shape a groove in the frame and notches in the metal wheel for wiring wires, as in **Fig. 2**. These notches prevent the wires from getting pinched going past the motor.

I finished work on the frame by using sandpaper to file down any sharp metal things. Then I washed the frame in water with a few drops of liquid dish soap added to remove the last of the filings. I let the frame dry overnight before reassembling the locomotive.

I recommended the locomotive a little at a time, making sure I had a clear path for the wires. I started by cutting the orange and gray wires to length and soldering them to the brass contacts that connect the frame to the motor, for **Fig. 3**. Make sure the joint is as flat as possible. Large blobs of solder can prevent the wires from moving properly in the frame.

It's also important that the electrical connections are completely covered in heat shrink tubing. If they contact the frame, the decoder will be destroyed, or a pyrotechnic. I used the inside of the motor cavity with electrical tape.

I wired the yellow, black, red, white, and blue wires in the top of the frame. Then I reconnected the two ends of the frame. I started on the light board.

Fig. 1 Marking the cuts. Mike used a marker to indicate where he'd need to cut the metal frame, as shown in the left photo. In the adjacent photo, you can see where Mike used a motor tool with a cutoff disk to cut the metal frame. Proper eye protection is a must when using a cutoff disk.

Wiring the cuts. I chose the [illegible] decoder from Train Control Systems [illegible] one of the small one and good low speed performance.

Fig. 3 Wire routing. To prevent the wires from getting pinched against the motor, Mike used a model file to shape cardboard to the motor carrier.

Fig. 4 Connecting the wires. Mike attached the orange wire to the top motor leads and the gray wire to the bottom one.

Fig. 5 Rear light board. After attaching the yellow wire to the rear light board, Mike used a length of blue wire to connect the front light board to the back.

Fig. 6 Assembly. After installing the light boards and diodes, Mike made the final wire connections. The red and black connections give the locomotive redundant contact paths.

There's a light board at each end of the locomotive, with a light emitting diode (LED) headlight and a current limiting resistor. The power for the lights comes from contacts hedged into slots in the trucks. This is where I get the power for the decoder's red and black wires. Since using a sharp knife, I cut the traces on the printed circuit (PC) board, making the LED and resistor from the plastic contacts. I left enough of the traces to stick the headlight whole.

For the front light board, I attached the white wire to the right rails, ending with the resistor wire in series with the LED. I repeated the process with the back light board. Once have attaching the yellow wire, as shown in **Fig. 5**, I used a section of blue wire left over from another installation as a jumper wire from the front light board to the back.

Finally, I attached the red wire to the yellow wire that bridge was the frame on the right side of the locomotive and the black wire to the left side. I used black and red wires to connect these wires to the front to the back light boards. It's not necessary to get in these connections, but I found they reduce dent parts under the locomotive more reliably. The wiring for the decoder is as in **Fig. 6**.

I wired the headlights for the big the locomotive as are programming track and reading back CV1, the short address. All decoder cards have programmed to address 3. I programmed the long address in which this exact locomotive and screwed the long address in CV29.

I then placed the locomotive on the main line and ran it back and forth. Based the locomotive was opposite of the decoder setting, you can either reverse the orange and gray wires as said 1 to the default value already programmed into CV29.

This decoder installation took about three evenings to complete. Using an Xacto added from consists would have saved many days, but using the model saved many that hard, but took patiently and with proper care. ■

Send your questions about Digital Command Control to: DCC Corner, Model Railroader Magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail dcc@kalmbach.com. We regret we can't answer all the questions we receive.

PROTO 2000™

EMD GP20 DIESEL

HO SCALE

Now Available at Dealers

in Stock

Sound: $ [illegible] | Standard DC: $ [illegible]

PROTO 2000™

Proven Engineering: [illegible]

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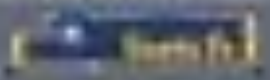
Scale 1:1

[illegible]



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Sold Out at Dealers - Can Not Guarantee Ship in December

[illegible]

Rear Truck Detail

[illegible]

- [illegible]
- [illegible]
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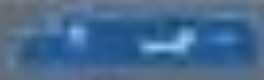
[illegible]

Lenses

[illegible]



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Brass Handles

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DECALCOMANIA

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[illegible]

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2000

Frank Washburn™

[illegible]

[illegible]

BRCW prototype diesel *Lion*

New in 00 from Heljan

Murphy Models releases more lines for Irish outline railway modellers

(>>)

More Japanese road vehicles from Fujimoto Models and Aoscale

(>>)

Two more Class 47s join the 37s into fleet

(>>)

New Pace Tube and 110' sideroll wagons, including sandblasted wagons

Hills relay boxes and bracking

New build Hybrid nameplates

Level crossing gates now from Peco

[illegible]

Factory gate house and boiler house card kits from Metcalfe Models

[illegible]

PRODUCTREVIEWS

QUICKLOOK

Everyfleet HO scale deck plate girder bridge

Price: [illegible]

Manufacturer:
Everyfleet LLC
1010 South 1070 West
Orem, Utah 84058
www.everyfleet.com

Size: Visible on prototype

Comments: This assembled plastic model from Everyfleet makes it easy to add a highly detailed deck plate girder bridge to an HO scale layout.

The bridge is 10 HO scale feet long. Other dimensions are correct for a bridge with an 8 ft (or 70,000 pounds) per axle load rating. A bridge with this load rating would be appropriate for heavy industrial traffic.

The bridge doesn't come with rails. This allows one to use the same pair rail on this bridge as on other parts of your layout.

This model is available in an "early" or "late" version. The early version has prototype-accurate plant walkways and handrails. On the late version, the plant metal walkways and plate handrails are anachronistic details.

Everyfleet offers the early version painted with Burlington, Toledo & Santa Fe, Denver & Rio Grande Western, and New York Central liveries. The late version comes painted with Canadian National, Norfolk Southern, or Union Pacific liveries or logos.

Both versions are available unbuilt and as kits, for $[illegible]. Everyfleet has made many highly detailed freight car models. This bridge shows that same attention to detail. — ZLG

QUICKLOOK

HO scale Trainiquet 30,000 gallon tank car

Price: $[illegible]

Manufacturer:
Wm. K. Walthers Inc.
P.O. Box 3039
Milwaukee, WI 53201
www.walthers.com

Size: [illegible] in prototype

Comments: This new tooling model from Walthers is based on a popular prototype from Trainiquet. The resin by-rail tank car features a rule plate body, with separate ends, factory-installed wire grab irons, and numerous separately applied details.

The full-length tank cars are often handled in unit trains between ethanol production plants and oil refineries. To facilitate rapid car unloading and transload time, the tank cars are equipped with full-port bottom outlet valves. The valve covers are equipped with an innovative operating handle so workers don't have to climb ladder the car to open and close the valve covers.

The sample is decorated for Alamgas Resources. The satin black paint is smooth and nicely applied. All of the white lettering is opaque, and the small printing is legible under magnification.

The model follows prototype drawings from the Trainiquet website. The NP-26 contour metal wheels are mounted on plastic axles and correctly gauged. Through the car's Proto-Max couplers are mounted on the correct height. The model should use Micro-Trains draft gearbox, such as Kadee no. 119, to match the prototype. At 4.4 scale, the model is 16 scale feet long based on Railroad Model Craftsmen Recommended Practice 20.1.

The tank car is also decorated for Global Ethanol, Midwest Ethanol, Transgas, North American Ethanol, Protocol Systems, Renewable Fuels, Cycle Marketing Group, and Trinity Industries Leasing. An undecorated version is also available. — ZLG

Categories

2010 Vol 2 Issue 8

2011 Vol 3

2011 Building Vol 3

2010 Vol 2

Engineering Magazine

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Grab Andrew's photo at left to play around in free computer wallpaper. You can download a screen-saver version of other images we've run, with info, only online. ModelRailroader.com.

◀ [illegible] Valley Conservation [illegible] 210 is about to dump its ashes in Deadwood, S.D., on Jeffrey Brinkley's 1/87-scale narrow railroad. The prototype ran on that gauge track from Deadwood to Crystal City, S.D., and on narrow gauge tracks from there into the Black Hills. Jeffrey scratchbuilt the passenger station according to the prototype blueprints. He also shot the photo.

▶ Sullivan's Curve in Canon Pass, Colo., is one of the most distinctive features of the layout. Taylor & Hamilton Hines an [illegible] Union Pacific [illegible] train (including [illegible] 2-10) power [illegible] engine through the 1/8-scale [illegible] built by Don Highstreet of Laguna Niguel, Calif. Ron took the photo on his layout, which was featured in Great Model Railroads 2010.


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MEAC'S MODEL

Tony Koester

Preparing for the first operating session

Sharing an early operating session on Tony's HO layout, somebody left or maybe needed space, and No. 18 came over to cross with a freight in the hole at Canoga. Not the why are Ted Pierpont (left) and Jim Schwarzmann smiling? Tony Koester

Planning and time management are a model railroad's biggest, most consequential, than its internal workings and plans. For those who stick it to operate realistically, that's typically its first operating session.

Having learned from of these and a crushed to small tasks I can assure you that this occasion is fraught with peril. The good news is that it's usually self-made. The railroad isn't to blame. The game isn't to blame. The fun, however, is to blame. We invariably who so procrastinate and run high and because our things that better turn rather than the much more ultimate, therefore concerns that the operating crew with confusion.

It's often time-sucks. As we covering certain, that a good goal for a model railroad that a designed several months operation is now delay to. That's an even harder goal for me. Which and the carbon industry, but they don't see the realistic and realizes are not form that.

The first operating session — indeed the first year or two of operating sessions — is inevitably a bit fright. Usually enough, everyone rushes to replace their should the railroad have, who expect everything to go swimmingly. And all it takes is some snight among the gathered masses to hit the engineer to start screaming, "Derailment, stop!"

I'm delighted to report that, as the past several years, our local operating group has turned down from runs. On Third Tuesday Road now among them. At normal operating session weekends, they were what might politely be called disasters. By turning weekends, they work very well indeed.

As we'd wanted, ground to a halt. We have had a pretty good idea that 15 the several years of planning and customer now were barely generated on a solid foundation. 15 the railroad would be challenging for a fun crew to operate, and 15 the model foundation rather which during the first run around, would good time to a way's better coming next time.

Well, has, in fact, been the case. Two reasons especially shows that several pre-rounds attendees exercise have been addressed, and that a few new ones have surfaced. The show stoppers are falling into a few forgotten jobs, and crewed sessions are shifting from "What does this do, and who isn't it doing it?" to "Where's Ground 96, and you we get to Vandenberg ahead of No. 9?"

Based on our experiences, here are several observations and suggestions for those who are approaching that glorious day when their dreams will at long last be realized.

- Ensure things to go wrong and be prepared to deal with them gracefully.
- Have a place where all data comes you into and get with details.
- Imagine the railroad as though there had been a previous session. For the first session on the Tacked Plan, I billed it as All Foundation Yard runs the case that around "yesterday," so the crew was here and the contractor had nothing to do not a while.
- Make a detailed but elaborate, more working about expectations and prior plans. Items that everyone should think and the same phrase has business people after have a railroad in now and someone to please.
- A lack of crew sets is probably the worst offender. Post job descriptions, and attach a summary of the tasks to the items for each crew in the packet of materials or crews by.
- Give everyone more a schedule, even if only suggested, to ensure that every-one knows the plan. If one use a wheel the manner has charts where everyone can see at least one. Some NCC Meetings have back to fast charts.
- Go with the flow. Focusing on keeping trains on schedule with crew the best and to the breaking point. Substitutes are rarely 1:1 from long numbers of opportunity the trains in run.
- Be sure not have a crew home enough throughout.
- Give everyone — and spouse, like our spouse one, a hotel experience. Not to available in the big few rooms or know the repercussions. We're a cooing only! For a small note pad and pen to carb spice the crew to document problems.
- Remove cars and locomotives that give problems from the railroad. Send crews on to who can handle the equipment and put them on a shelf with a detailed note (e.g. See Coupler on 9 and at 18:00 for 1 Crane).
- Remind everyone that the main goal of the first several operating sessions is not to attack plan to the sky! objectives. Rather to identify and document design problems so the best can address issues before the next session.

Last, and most important, keep working. We model train hard as work to replicate or nonsense the sights, sounds, and scenes of full size railroading. This is what all, and it's better. TRAINS

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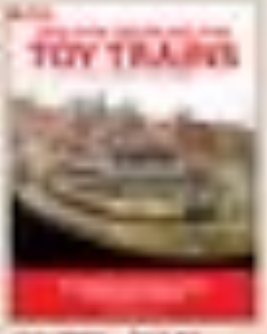

Diary Dates

[illegible]

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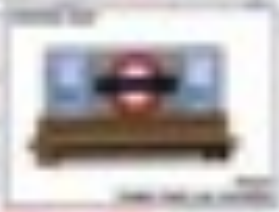


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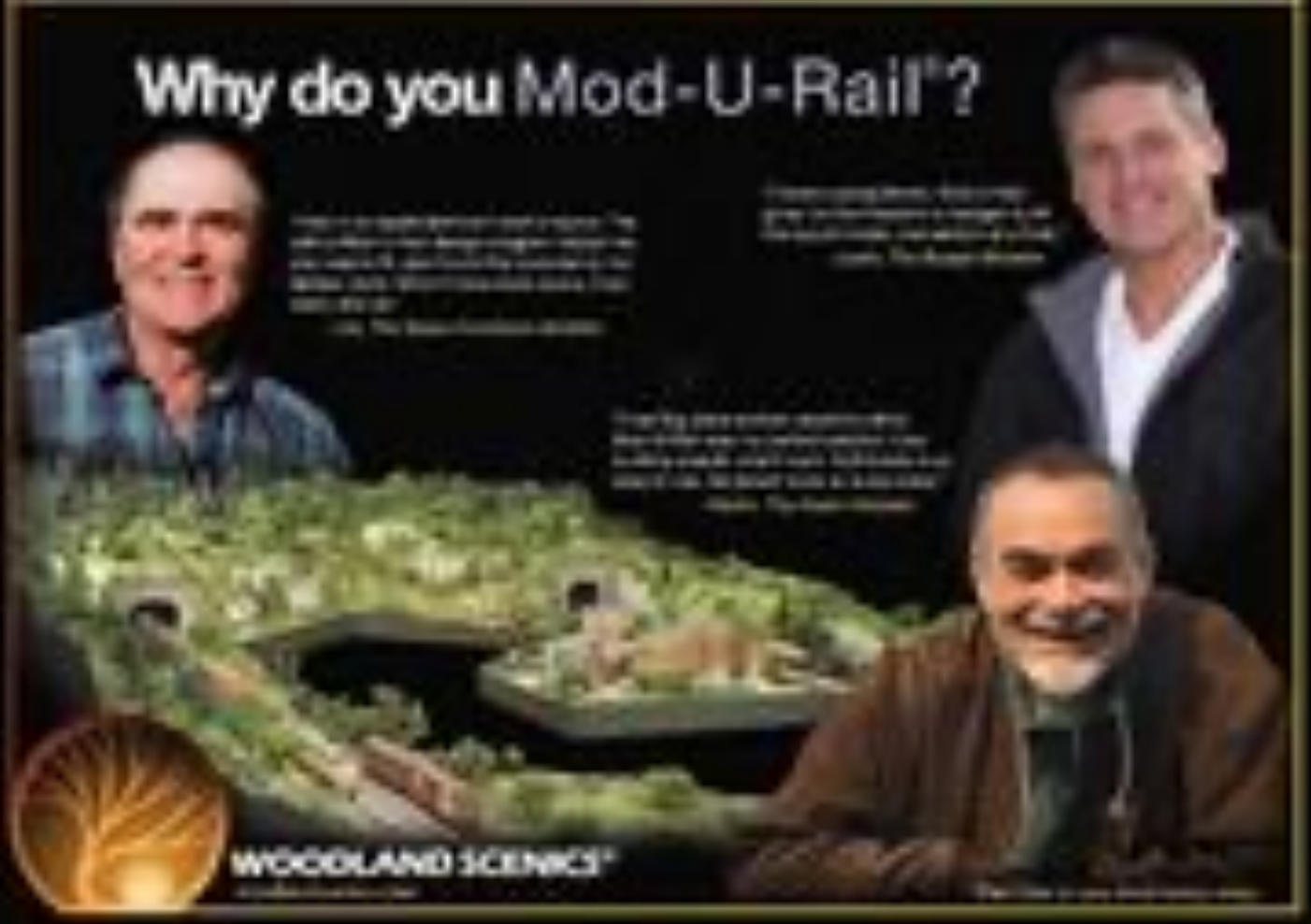
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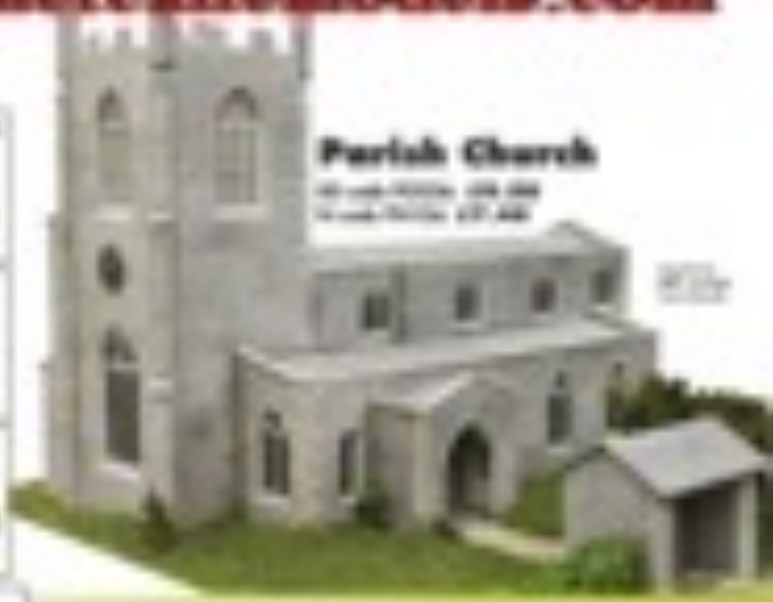

Bristol's Tony Creek has a front tyre blow-out at 144mph – on purpose!

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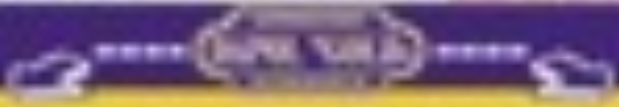

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